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THE YEAR BOOK OF EDUCATIO

1950

THE YEAR BOOK OF EDUCATION 1950

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THE UNIVERSITY OF LONDON INSTITUTE OF EDUCATION
BY EVANS BROTHERS LTD, RUSSELL SQUARE, LONDON

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INTRODUCTION

THE YEAR BOOK is concerned, in the first place, with developments of educational thought and practice in the Commonwealth but, in addition, it offers to distinguished educationists all over the world the opportunity of addressing themselves to their English-speaking colleagues. The contributors write with complete freedom and from their own political, ideological, or national standpoint. The Editorial Board avoids all forms of censorship though, on occasion, invites the writers to restrict themselves to the study of particular topics or aspects of the whole educational scene. This is done in the belief that, as a result, the material collected may have more coherence and, also, greater value as a source for the study of comparative education.

For the present volume, there was proposed as a focus the general theme of occupational selection and differentiation through education In other words, the contributors were asked to consider with special attention the manifold ways in which the educational system helps to select and to train people for certain jobs Clearly, this topic is one of great complexity and difficulty and it involves social and political issues It is precisely for these reasons that it has high importance and interest Unfortunately, in this field there are great gaps in objective knowledge it has not yet been fully explored by modern sociological and historical research It was hoped that the YEAR BOOK might do useful service by attracting attention to this and arousing interest in the research needed

In the process of selection or guidance, a number of inter-related factors exert influence First, of course, the family background and the financial resources of the parents, and, related to this, but acting strongly only in some countries, the factor of race and caste. These are all important where there exists a system of private schools charging high fees or where the official secondary schools, or at least some of them, admit nearly all pupils capable of paying the fees charged. In addition, a rich and cultured family background may provide opportunities for the development of abilities needed in certain occupations or the family tradition may, so to speak, drive children towards certain professions Secondly, in some countries special facilities are available to certain groups while obstacles are put in the way of others. Thirdly, everywhere personal qualities of intelligence, character, and health count As a rule "intelligence" and the power of learning academic subjects easily play a

predominant role, but a premium also tends to be put upon docility in school and upon ease in adapting oneself to other people

The attention of our contributors was called to these facts and it was pointed out that they would have to survey, however briefly and roughly, the effects of family structure, social class, set-up of educational institutions, etc on the way in which young people are guided towards the jobs they do in adult life We were interested in at least three levels of selection and guidance the broad, rough sorting which operates in many countries at about the age of 11 or 12 when those who are likely to become manual workers begin to separate from those who may become administrative or professional workers, the second level, when those who will attend the universities or other places of higher education are chosen, the third, which might perhaps be termed "the selection of leaders" Information was required about the provisions made for scholarships, studentships, bursaries and grants-in-aid, that is about the special devices which attempt to diminish the importance of wealth as a factor of selection. And, also, it was asked of our writers to take note of the way in which character and personality traits—including manners, dress, bearing, mode of speech, accent—considered appropriate to special social groups or occupations, such as, say, the military, are fostered and taught

It is, of course, unnecessary to give here the full list of questions which were sent to contributors but it may, perhaps, be interesting to quote the following Does the structure of the educational system itself—that is, the kind of schools which exist, their number, their curriculum and so on—help to direct certain children to certain types of occupation? If such a system existed in the past, but is now being modified, what forces have been chiefly responsible for initiating the changes or reforms? If more than one system exists, as in Canada or France, how does this affect and complicate the picture? How does the educational system tend to encourage or to develop social mobility? Does the widening of educational opportunity enable pupils to reach levels higher than those of their parents? How are leaders in public affairs, business, industry, the professions or agriculture chosen, educated, and trained? Is it purely an accidental result, the chance product of the social system combining with personal qualities?

The last paragraph of the memorandum to contributors was the following "It is interesting to know how, in different countries and cultures, children come ultimately to take up certain occupations, careers, or vocations This is very often in part accidental—many become coal miners because there are coal mines near their parents' homes, or agricultural workers because their parents live in the country But there is also the steady directive and selective effect of institutions, and especially of family and school How do

schools and universities and, in fact, the entire educational system play a part in this connection, especially in the selection of the upper ranks among technical, administrative, and professional groups"

What was said above will help to explain why our contributors in the countries represented in the present volume have written as they have. Of course, one should bear in mind that the questions may have little relevance in some societies and also that they may be unanswerable at the moment through lack of necessary research

In addition to the general contributions from various countries, it was considered desirable to print a number of special studies For example, testing plays an ever more important role in selection Sir Cyril Burt and Prof E A Peel were therefore asked to expound and discuss the general background and theory of testing Again, it is an open question whether in selecting persons for much-desired posts one is justified in laying weight principally on hereditary factors of a genetic kind (intelligence, health, etc) or of a social kind (family training, etc) Evidently the perplexing problem of heredity and environment is here involved Since the biological foundations of the theory of heredity have been reconstructed during the last thirty or forty years, Dr Waterhouse was asked to discuss it Again, the way in which the population is distributed relatively to the location of the schools exercises a selective effect for instance, country children living far from secondary schools have a smaller chance of rising to professional posts than have town children So a study by Prof de Coster is included in which he considers demographic changes in relation to social selection In addition, two research reports, on particular aspects of the whole problem, are added by Dr. N Hans and Mrs. J Floud

The final section is a statistical investigation. Experts, at the cost of much labour, have gathered for the YEAR BOOK data which are published here for the first time It will be noted that, in that section, the contributors have endeavoured to discover how far the present methods of selection for professional and upper administrative posts enable young people, irrespective of their social origin or financial resources, to succeed in accordance with their abilities

Lastly, the Editors have contributed an introductory article which, it is hoped, will be found helpful. Basing themselves largely upon the articles published in this volume, they have endeavoured to provide a general theoretical framework within which the separate contributions would fit and from which they would gain added meaning.

They realised that there are great gaps in this collection and that the amount of work that remains to be done is enormous before

the subject—education and occupational distribution—can be considered adequately dealt with. This volume should be considered as a pilot-study, helping in the preliminary analysis, drawing attention to important problems, helping workers in the field to co-ordinate their efforts.

G. B JEFFERY.

SECTION I

SPECIAL STUDIES

CHAPTER ONE

SELECTION AND SOCIAL PATTERNS

THE contributors to the present YEAR BOOK were invited to consider how the educational pattern and the occupational pattern are related to one another It was suggested to some that they might deal with this topic in the light of their knowledge of a particular country or region Others were asked to restrict themselves to one aspect of the whole problem, such as the relative importance of heredity and environment in the development of ability, or the theory underlying the construction of tests used to select individuals for special forms of education and training. Put in a manner which is at once too simple and too concrete, the problem posed could be worded as follows Here are two boys not very different from each other in health, energy, and intelligence. Twenty years later one has become a doctor, the other a shop assistant How has this differentiation come about? What factors have operated to determine the vocational decisions made? Evidently family traditions, home background, and parental income account for much So, too, do the availability of the right schools, the outlook and prejudices of teachers and examiners, the kind and degree of ambition stimulated in the child In fact, of course, the importance of the factors involved varies from one country to another and the weighting of each alters continually as social change proceeds

The central theme of this YEAR BOOK, it will be noted, is essentially sociological On this occasion our contributors are not primarily directing their attention to those aspects of education which are rightly considered of first importance by those who work in classrooms—methods of teaching, questions of rewards and punishments, ways of individualising instruction, problems connected with activity methods or projects and so on They are thinking primarily of educational institutions as a mechanism through which certain children are selected and trained to fill particular roles in society They have in mind the educational system as a whole—the number

and kinds of schools, what goes on in them, how they are run and financed—as one among several instruments of social action through which the processes of civilised life are both maintained and modified. However, such concentration of attention upon a single facet of the rich and complex whole denoted by the word 'education' does not imply that either the contributors or the editors are blind to others. Everyone realises full well that to consider a school as an agency for selection, a sort of sieve, is to leave out of account what it does for the spiritual enrichment of its pupils, whatever their future occupation may be To think only or chiefly of the selective and vocational aspects of education is to neglect what are probably its most vital and valuable elements Nevertheless, there are advantages in drawing attention to an aspect that has been, perhaps, a little neglected by theoreticians The topic of education and its relation to occupational distribution is of vast importance to every country in the world, above all to Great Britain, at this time of rapid technological change when everywhere the occupational patterns are being transformed. But it should be added that the relative backwardness of the social sciences has caused difficulty The task of our contributors would have been vastly simpler had they been able to refer to the collections of analytical monographs and of objective detailed studies which would have sustained them had they been writing, say, ordinary political history Often they were asked to make bricks without sufficient straw Yet, even in such cases, their essays are of value, for they point the way to needed research and facilitate the work of those who will come after them

There is, of course, nothing new in speaking in general of the connection between education and occupation That a relation between the two exists has always been obvious During the Middle Ages, for example, the son of a serf became a worker on the land and received the kind of training appropriate to that status and occupation On the other hand, a father who wished his son to enter the Church or to become a doctor or lawyer and whose financial means allowed him such ambitions, knew that it would be necessary to send the boy to a school where Latin was taught and later to a university Thus, the making of the vocational decision imposed the choice of education needed. Or again, during the nineteenth century, in England, one found at least three educational systems existing side by side They were roughly attuned to the educational needs of those who proposed to follow professional or administrative careers, clerical or commercial occupations, and manual trades The cost of sending children through the first system was much higher than that of sending them through the second besides the landed gentry, only rather well-to-do merchants or manufacturers were able to face it. Professional persons of average means endured it only when more or less driven to do so by strong traditions or compelling

social influences. The third system, as a rule, cost the parents nothing except the loss of wages which the children might have earned. Parents, therefore, postponing exact vocational decision and considering geographical availability as well as cost, sent their children to schools about as expensive as they felt able to afford. By thus choosing a type of education, they also chose a type of occupation, since only in the rarest instances could a boy aspire to a job for which he had not received the 'right education' It is not so many years ago that the appointment to one of the highest positions in the Civil Service of a man who had not been to a 'public school' called for admiring comment in the Press The point made here is that the structure of the educational system—the location, cost, and kind of school—itself acted as an agency of occupational selection and vocational guidance. It had not been planned by the State with that end consciously in view, but by the Church and the voluntary agencies On the other hand, unconscious motivation also plays an important part in the life and development of social groups.

Status-Hierarchies Class and Caste

The existence of the three streams in nineteenth-century England helped the well-born and the well-to-do to obtain for their sons well-remunerated and responsible posts and, in consequence, allowed these sons to maintain a style of life like that to which they had been accustomed in their youth. The 'public schools' taught the habits of speech, dress, and behaviour characteristic of the 'upper classes' and, furthermore, led their pupils to expect that, some time or other, they would be placed in positions of authority. At the same time, and certainly without meaning to do so, the schools attended by working-class children developed among these groups attitudes of deference and respect Thus the entire educational system was attuned to the maintenance of the status-hierarchy of the time, even though the cumulative by-products of its social action were facilitating the transformation of that status-hierarchy which has since taken place. Even at present the parallelism of social stratification and different kinds of schools persists, as the article on Independent Schools, by Dr N Hans, shows quite clearly. Whether the same story could be told in twenty or thirty years' time is another matter.

There is nothing strange or unusual in this adaptation of schools to a social order. Every civilised community that has ever existed or which now exists has known a status-hierarchy. That is, within each there have been groups such as the army, the Church, the Civil Service, the party bureaucracy, the owners of land, which, by virtue of the functions they discharge or the social role they play, enjoy honour and prestige. Usually these groups manage to enjoy a greater-than-average command over material things and

considerable political power or influence The point is that the position occupied in society by any individual is not simply due to his inherent ability but also to his membership of and acceptance by a status-group. The educational system is one of the agencies by which individuals are introduced into appropriate status-groups. A detailed analysis of this situation is presented in Mrs Floud's article on Educational Opportunity and Social Mobility

The social hierarchy is never rigid or entirely stable. Whole groups may move up or down and, of course, so may individuals social climbing or social sinking On the other hand, societies vary greatly in the amount of vertical social mobility which is possible or allowed We can imagine a society in which an individual is for ever attached to the stratum in which he is born, such stratification would be rigid, impenetrable, immobile Or we can imagine the opposite a society which is open, penetrable, plastic, mobile, a society in which vertical mobility is intensive and general

A rigid caste system would be an example of the first type and classical Hindu society approximated to it. There were four main castes the Brahmins, the warriors, the farmers, the servers (*sudra*) There were also a vast number of sub-castes the 1901 Census of India recognised two or three thousand Some of these sub-castes were occupational groups, having certain analogies to mediaeval guilds, out of which it would be impossible, or at least exceedingly difficult, for a man to move Thus, there were the two million *Cayasts*, or official scribes, the four million (*Sudra*) *Teli* or oil-pressers, the *Sonar* or goldsmiths, the *Kumbar* or potters, the *Lohar* or blacksmiths, the *Kuruakar* or metal-workers. Evidently, with children born into any of the sub-castes the problem of occupational selection simply did not arise A boy followed the trade of his father and learnt it by imitation and precept With other castes, however, one found quite strong occupational mobility, since only a rather loosely defined type of occupation was prescribed, for example, commerce for the *Baniyas* In more modern times one found that chauffeurs often came from the caste of surveyors, whose members naturally knew the roads particularly well

Society in the United States of America offers a marked contrast to the situation described above Professor Havighurst speaks of it as "class-structured with relatively high fluidity and social mobility" Nevertheless, it should not be forgotten that the relations between 'white' and 'negro', especially in the Southern States, are most easily described in terms of caste. As regards the white population, one finds, however, that an individual may move up or down through several social strata during his lifetime—and if he moves upwards he receives much approbation. American society is quite complicated—sociologists are in the habit of using five, six, or even seven class-names when describing it, as Professor Havighurst's article shows As in Europe, material prosperity, together

with its valued symbols, is unevenly distributed and, increasingly often as the years pass, individuals stay in the class into which they are born The fact remains, however, that social mobility is higher than in most countries and that, if it is upward mobility, achieved by marriage or professional or business success, it is warmly approved.

Social Mobility

It is sometimes assumed that ambition and a desire 'to get on in the world' are natural to man This is very far from being the case indeed, it might almost be said that the opposite is true It is only during the last two centuries or so, and typically in Western societies, that the desire for upward movement has been at all widespread among the masses of the population Nor should it be thought that such high mobility makes for happiness In his *Contemporary Sociological Theories,* Pitirim Sorokin, summarising numerous inquiries, lists the effects of high mobility as follows

(*a*) Since the upper strata usually have fewer children than the lower, intense vertical mobility leads to a wasting of the best hereditary strains in the population,

(*b*) Intense vertical mobility "facilitates an increase of the plasticity and versatility of behaviour, open-mindedness, mental strain, intellectual progress, and progress of discoveries or inventions" On the other hand "it facilitates an increase of mental diseases, superficiality, insensitiveness of nervous system, scepticism, cynicism, it also diminishes intimacy of relations of individuals, increases their social isolation and loneliness, favours an increase of suicide, hunting for sensual pleasure and restlessness, finally, mobility facilitates disintegration of morals"

(*c*) The effects of mobility in the field of social progress and organisation are very complex and, on the whole, rather negative "It facilitates atomisation and diffusion of solidarity and antagonisms, increase of individualism followed by a vague cosmopolitanism and collectivism."

We should note that these conclusions, interesting and important as they are, are based on observations in stratified class societies with different codes of behaviour for the different strata They cannot be directly applied to a society differentiated only by abilities and functions, where civic and moral attitudes are the outcome of a truly national system of education.

A marked increase in social mobility occurred in Western societies during the eighteenth century the caste-like elements in the hierarchy diminished in intensity, so that the marriage of *parvenus* into the nobility became even more readily acceptable.

At the same time, inventions and the diffusion of scientific learning resulted in a large influx of newcomers from the lower groups into the professional and the merchant class. With the spread of

commerce to distant parts of the globe and with the beginnings of large-scale machine industry the chances of making a fortune increased It was no longer necessary to risk one's life on unknown oceans to gain a great deal of money quickly, and even a voyage to the Indies, to China, to America was less dangerous than it had been. The application of steam power to machinery, the division of labour and specialisation, factory organisation of production, all these and a multitude of other factors increased the need for special forms of educated expertness. Slowly at first and then, during the twentieth century, with great speed, the technicians invaded the workshops until they played in them a dominant role Meanwhile, the number of services provided by public authority increased quickly and social organisation became tighter and more pervasive. Thus the number of civil servants, accountants, doctors, dentists, managers, teachers grew until, in the aggregate, they formed a considerable percentage of the total population It would have been impossible to supply so many educated and well-trained persons by recruiting them only from the top strata of the hierarchy Somehow they had to be selected from the middle and working classes

With industrialisation on the increase, farm labourers everywhere drifted into the spreading towns They lost their local traditions, the intimacy of rural cultural contacts, and became simply an economic commodity, bought and sold on the labour market But in time the awareness of their common economic interest grew and there developed what came to be called 'class solidarity' With growing force, and not only in the industrial but also in the political fields, the working classes urged their claims for a fairer, more equal distribution of the good things of life, both material and spiritual In particular, their spokesmen continually stressed their need for access to the better-paid, more responsible, more honourable posts in the public service, in industry, and in commerce It was generally realised that one gateway to such was through education and thus was born the demand, expressed in various slogans, for equality of educational opportunity

It is worth noting that the process just referred to is found in its most characteristic forms in countries where factory industry developed most strongly. But it occurs elsewhere, too, even in nations like France or Denmark, which remained largely agricultural. After all, here too the process of production was being changed, at least after 1850, by the applications of science, specialisation upon cash crops involving complete dependence upon the market, and the gradual decay of subsistence farming and village autarky—in a word, the basis of social life was being transformed.

Some sociologists and historians find it helpful to deal with the evolution very briefly described above in terms of social classes and their so-called struggle. Such writers tend to stress the fact that there was a class antagonism between the landed aristocracy

of the eighteenth century and the mercantile manufacturing classes. As Marx said, "the productive forces developing in the womb of bourgeois society created the material conditions for the solution of that antagonism" The French Revolution and the consequent movements in other lands brought the old 'middle classes' to full political power, which they shared with the older holders of influence and prestige. But having come to power, they demanded its fruits access to the good things, the best education (classical curriculum!), the best jobs. Later still, as the nineteenth century went by, the manual workers also began to reach out for power, and new forms of antagonism developed. The proletariat, once it had obtained political power, demanded its fruits, and the fundamental reform of educational systems is one answer to these demands. It is evident that an analysis of this kind is illuminating in the study of certain aspects of the problems dealt with in this YEAR BOOK. However, it is not particularly helpful in the consideration of the relations between education and social mobility, largely because of the vagueness and lack of precision in the definition of the word 'class' [1] Lack of precision does not matter greatly when one thinks only in terms of broad social levels, as we have done, but it matters very much when the 'classes' are endowed with a sort of absolute existence and struggle is postulated between them, a struggle, moreover, which is considered a fundamental cause of social change. For this reason, the concept of 'class struggle' has not been much used in the present paper.

Mechanism of Social Rise

We come now to the consideration of the ways by which social rise takes place In the first instance, it is clear that it operates most easily within social institutions like a Church, a school, a trade union, a political party, or an army For in most professions there is a hierarchy and, once he has been accepted into it, an individual may hope to rise upward not only in that hierarchy but also correspondingly through the social levels Often, too, simple admission into the profession is in itself a rise in the social scale—as when the son of a manual worker becomes a teacher, a clergyman, or a doctor. Thus these institutions and professions act as elevators by means of which people can move upward.

In addition, mobility is controlled by a complex machinery of selection and testing The family, the Church, the school, the Trade Union test and retest the general intelligence and character of individuals and especially their ability to perform successfully certain occupational functions. This 'selecting and testing' role of institutions is almost as important as their 'educational and training' role.

[1] In his *System of Sociology,* Sorokin gives thirty-two principal forms of definition of this term.

The matter has been recently studied by Dr. A. Graffar-Fuss.[1] She inquired into the social antecedents of the pupils in one of the training colleges for teachers of the city of Brussels, and endeavoured to discover the occupations of their parents, grandparents, and great-grandparents Perhaps the most striking result obtained is that the social rise is only under the most exceptional circumstances achieved at one step by a single individual. More usually, to rise from the status of agricultural labourer to that of elementary school teacher was the fruit of three generations of effort It should be stressed, however, that this applies to Belgium, where the first industrial revolution started some fifty years later than in England, and where even now social mobility is somewhat less than in English-speaking countries, but the results confirm others obtained in Britain a number of years ago and they are what one might expect

The first step, generally taken by the great-grandparents about 1850, was to move from a small village to a market town The next, taken rather often by the grandparents, was to move to Brussels Evidently this involved change of occupation Half the great-grandparents were agricultural labourers, not one of the parents earned his living as a hired farm worker Only 2 per cent of the great-grandparents were clerks of one kind or another, but 11 per cent of the grandparents and 48 per cent of the parents earned their living in offices or classrooms

Another point worthy of note is that social rise proved hard for those with large families Half the students considered were single children and only one in twenty came from a large family

Dr Graffar-Fuss considers in some detail the kind of mentality which is probably typical of young people who have travelled this particular kind of road What she says should be compared with the conclusions reached by Warner, Loeb, and Havighurst in *Who Shall Be Educated?*, and with Havighurst's article in the present volume Professor Castrilli's article illustrates the same points with reference to Italy, and our comparative statistical tables support similar conclusions To follow the matter further here would, however, take us outside our framework. We must be content to note that we have here a clear case, and a well-documented one, of social mobility through the use of educational institutions, a good example of the teaching profession considered as a social elevator. Incidentally, the social rise was accompanied by a financial improvement in only 25 per cent. of the cases studied!

Schools as Social Elevators

It would be easy to give many other instances of the process just described—from farm labourer to teacher in three generations, or

[1] She has published her results in the *Archives Belges de Medecine Sociale*, 1948, pp 145–264.

from craftsman to clergyman in one generation It is the sort of thing which happens in the first period of industrialisation and displays the reaction of overworked and underpaid drudges anxious to provide for their children a better chance in life than they have themselves enjoyed. In every Western country, and in Eastern Europe, too, there are countless solicitors, clergymen, doctors, dentists, professors, teachers, managers of banks, factories, or offices, whose fathers or grandfathers were simple proletarians. Such change of occupation—from manual worker to managerial, administrative, or professional posts—involves a rise of status which would occur only exceptionally in a caste society One need scarcely add that the process depends upon the availability of secondary and of university education, although cases of self-made men could be cited from every country.

As we have pointed out earlier, in mediaeval Europe children tended to follow the occupation of their parents When they changed it, there was involved, as a rule, little or no change in social status The carpenter's son might become a blacksmith, the grocer's might be apprenticed to a butcher But it was extremely unusual for the butcher's son to rise far—though the Church, of course, might lead even to a cardinal's hat To become a lawyer or a doctor in a mediaeval society meant prolonged education in grammar school and university—which meant that the family had to be comparatively wealthy In the eighteenth century, however, apprenticeship to a surgeon in a hospital or to a lawyer in Inns of Court was largely substituted for academic training in the university, though it usually required connections and certain expenditure

The situation was to some degree modified by the existence of scholarships and bursaries, as well as by occasional adoption by noblemen or religious orders Sir Michael Sadler, in his paper on *The Scholarship System in England to 1890,* cites examples Cardinal Morton, Archbishop of Canterbury, received into his house "the sons of noblemen and young gentlemen who returned thence home excellently accomplished." William of Wykeham had parents who "though of good birth, were not overflowing with riches Hence the son was nourished in secular letters, not by their patrimony, but by the patronage of others" In time, many schools were founded, like Christ's Hospital (Grammar School), for instance, where poor children were taught without fees being charged. There is evidence that this provision of free education helped many poor scholars to rise socially, but only into the ranks of the lower clergy and of teachers. On the whole, it tended to assist the sons of impoverished gentlefolk to maintain the status of their parents. Sadler says that William of Wykeham's aim at Winchester was "to recruit the ranks of the clergy and administrators by enabling a large number of the sons of the poorer members of the middle and upper classes to secure a school education which would well prepare them

for university study at Oxford." And he quotes the founder's order that the scholars of Winchester were to be "poor and needy scholars, of good character and well-conditioned, of gentlemanly habits, *ad studium habiles*, completely learned in reading, plain song and old Donatus." Similarly, the statutory qualifications for election to a scholarship at Eton were poverty, aptitude for study, good character, and a complete proficiency in reading, plain song, and grammar—the age-limits for admission were 8 to 12, with occasional exceptions to 16 Evidently, it is highly unlikely that such conditions could be met by the children of labourers or artisans, though some might enter universities as servitors or sizars School could then be used only in a limited way as a lever to cause social rise, for family connections or the personal recommendation of powerful patrons would often count more than real ability

In a mobile and changing society, the situation is very different Ambition is strongly stimulated and many ardently desire to enter into social layers higher than that into which they were born Furthermore, as we have already pointed out, increasing social complexity and organisation together with a richer provision of services, like education or medicine, mean that there is a large demand for well-educated and professionally competent personnel There is more room higher up the social ladder, and more people desire to climb it. The qualities needed are, for example, inventive capacity, diligence, business acumen, intelligence Furthermore, the development of 'professionalism' itself provides new social elevators

The Criteria of Selection

It would be well, at this stage, to consider in the most general way what kinds of criteria may be applied in various societies when deciding whether a particular aspirant shall be admitted into a profession or institution. We note, in the first place, that these persons can be selected upon grounds of race or family. Thus, in Sparta only the sons of citizens could become soldiers, and helots were excluded as rigorously as were Negroes from the United States military academies a generation ago In this twentieth century, almost everyone considers that to apply such criteria is bad or unjust, but it is worth noting that the simple hereditary principle has advantages. It works well when the positions to be filled require no very highly developed technical skill or knowledge, no unusual intelligence, but chiefly the habit of command based upon the expectation of deference. The officers of the armies of the Middle Ages, and even of later centuries, were largely recruited in this fashion and the mode of selection has persisted. The Prussian officer caste is a striking example, and everyone knows of families where the sons habitually go into the army or navy. For a modern army, equipped with scientific and engineering devices, such a method of selection may have fewer advantages. The second great criterion is wealth· one

can select persons who have at their disposal, either directly or through their families, a sufficiency of money. A simple example is the purchase of commissions in the armies of the eighteenth and nineteenth centuries. A more complex example is selection through education, when the education itself has to be paid for. If one insists that doctors should know Latin (which is functionally useless), and if Latin is taught only—or at any rate much more effectively—in schools which are expensive, one is selecting medical men partly by applying a money criterion In the third place, one can and always does use functional criteria—health and physical strength for service in the army, technical knowledge for entry into the professions, intelligence and capacity to learn for entry into institutions of higher learning, suppleness and gymnastic ability for entry into dancing schools, such as those maintained in Russia. Lastly one comes across certain rather specific criteria of admission or rejection, such as membership of a particular Church (in English universities up to the middle of the nineteenth century), or non-membership of a particular ethnic group (the *numerus clausus*), or even quite extraordinary qualities such as the blond hair and blue eyes favoured by the Nazis when selecting pupils for their *Ordensburgen*—not to mention the pink skin insisted upon in the south-eastern U S A.

Thus, the three great criteria for social selection are—blood, money, ability And one should, perhaps, add as a fourth, sex, since almost everywhere women suffer handicaps. Naturally, in concrete cases one finds that all three criteria are to some extent and often unconsciously applied and each is given a different weight in different societies In Russia to-day money plays a relatively small part, intelligence counts for much, birth has a good deal of importance the grandson of a proletarian finds things easier than the grandson of an aristocrat The same thing, incidentally, has been put in a less abstract manner by a writer who pointed out that in some societies the first question asked of a newcomer was "who is your father? Do I know your family?" These were societies dominated by aristocratic values Elsewhere, the first question was, "How much money have you got?" These were the so-called plutodemocracies. And, in other communities, those of the frontier-type, the new societies, the question was, "What can you do?" This writer was expressing in paradoxical and anecdotal manner a fact which has struck many regarding the difference in social outlook between older and newer countries In fact, people do everywhere tend to ask all three questions, though often silently, but in different orders, and they attach varying degrees of importance to the answers.

Everywhere in Europe, before the Industrial Revolution, the criterion of birth and family status mattered greatly. A father who had made money in trade or manufacture found it rather difficult

to stabilise his son's position by getting him accepted into a school attended by the aristocracy or by marrying him into a class higher than his own When parents of this kind find it difficult to secure the admission of their children into schools with prestige or if, even when these schools are not closed to them, they consider their curricula altogether too far removed from truly important concerns, they establish or support other and rival establishments This is what happened during the eighteenth century, which saw the rise of the private academies—and their decay when the older public schools reformed their ways and became less exclusive The French Revolution marks a period in this evolution It was, in the first place, a revolt against privileges claimed on grounds of birth and an assertion that there should be no appointments closed to children coming from particular social groups All positions, it was felt, should be open to the children of middle-class parents engaged in trade or industry or in professional work Napoleon well expressed this aspect of his reforms by the phrase *"les carrières ouvertes au talent"*. It was thus quite fitting that the Revolution should be accompanied almost everywhere by a considerable development of secondary education, the gateway for these middle classes to well-paid positions It was at about this period that were founded the *Lycées* in France, the *Realschule* in Germany, the *Athenées* in Belgium A little later, when England shared in the movement, numerous new public schools were opened None of these schools was free ability and intelligence did not yet count as much as they do now What had happened was simply that money counted more and birth less. Nor should it be supposed that the payment of fees evoked strong protest the cost of education, lever of social rise, was a nuisance, but at least it provided a protection, a barrier, against the proletariat

The sort of social and educational development hinted at in the previous paragraphs has taken place everywhere as a concomitant of the process of industrialisation, although, of course, in many differing guises The older order gave great advantages to the well-born—it stressed the hereditary principle. The groups or classes in the population which increased their wealth and their power as a result of the changes in the habitual modes of production resented this and attacked the privilege of birth They stressed, instead, the claims of ability, energy, learning, technical efficiency, as the criteria which should be important—that is, they stressed the qualities the exercise of which had led to their own rise At the same time, the social order grew in complexity and the State apparatus increased in size and activity. Both developments necessitated the training of large numbers of clerical workers, who could be provided only by schools, colleges, and universities. The administrative and financial structure of these new institutions, however, was such that in practice only the children of families which were rather successful in

the material sense could gain entry to them Thus, while in theory the hereditary principle was rejected and full equality for the whole people proclaimed, privilege of access to professional and administrative posts was to some degree restricted to those young people who had chosen their parents wisely

Underneath all this, however, other forces were at work preparing the way for yet further social transformation The new technology, based on the harnessing of steam or water power, on the use of complicated machines, on the applications of science, required the services of workers who had had the advantages of at least a modicum of schooling Inevitably, a whole system of elementary or popular schools came to be established providing instruction for children of manual workers and of artisans The latter, aware of their common interests, supported labour movements which became politically influential Inevitably, a demand was raised for access to the better posts for the children of the workers—a movement repeating that through which, at an earlier time, the middle classes had raised their own status Projected on to the educational plane, this demand was for access or easier access for working-class children to secondary schools and universities It was not strongly resisted, for it was felt by all as a just demand, and, moreover, since the *tempo* of industrial development was fast enough there was plenty of room in the occupational pyramid for trained and well-educated persons Thus one found, in the secondary schools, at first a few exceptionally gifted working-class children, then a larger, though still restricted, proportion (say 10 per cent), finally, a fraction almost corresponding to their numbers in the population as a whole A similar development took place at the level of institutions of higher learning, though it took place at a somewhat later date

Imperceptibly, it will be noted, the relative weights attached to the various criteria mentioned earlier had altered The influence of those connected with social origin, with the family, such as birth, money, possibility of obtaining patronage, diminished, while the more individual ones, those connected with ability, intelligence, good memory, diligence, increased. We have here, indeed, yet another instance of that diminution in importance of the family as a social institution which dismays moralists but appears to be an inevitable accompaniment of industrialisation and socialisation It may be said that by giving people a place in society commensurate with their individual gifts rather than with the position of their family or parents one lessens the importance of the family itself as an institution.

It is from the point of view sketched above that we must now consider, very briefly, two important topics the history of the curriculum and the growth of the examination system

The Schools and their Curricula

The view developed so far is that the whole structure of the educational system—that is, the number and kinds of schools as well as the way they are organised and financed—acts as an agency of selection, picking certain people for certain jobs, assisting the social rise of some and excluding whole groups or classes from positions of prestige and influence. But it is not only structure that is thus selectively operative At the level of curriculum (by which is meant the whole range of activities which the school promotes) and even at the narrower level of instruction, its selective function can be discerned very clearly

The speculative thought of the ancient Greeks was originally directed towards the study of the universe and of the physical laws of nature The intellectual and moral problems of mankind were somewhat neglected, at least up to the time of the Sophists and of Socrates Further developments usually associated with the names of Plato and Aristotle combined these two aspects and provided a theoretical basis for a curriculum dealing on the one hand with the arts pertaining to man (the *Trivium*), and on the other hand the arts pertaining to the nature of things (the *Quadrivium*) The Christian nations inherited this system of seven liberal arts, but subordinated its study to that of the quest for salvation and to theological concerns Gradually the *quadrivium* was neglected or transferred to the university stage The schools which prepared their pupils for more advanced studies became literally *grammar schools*, oriented towards clerical occupations In the mediaeval period, a Latin education was not a privilege restricted to the upper classes, but, on the contrary, the feudal and military groups tended to avoid the Latin schools and were trained for court or battlefield on more realistic lines The rediscovery of Greek philosophy and scientific thought at the time of the Renaissance had two results It promoted the study of nature and led the way to further scientific discoveries. At the same time it accepted classical literature as a model of expression worthy of study and imitation. Gradually the unity emphasised by the humanist tradition was split between scientific activities stressing usefulness, on the one hand, and formal linguistic studies seen as purely intellectual accomplishments, on the other The old Greek contempt for manual work (*banausic*—slavelike) was transferred to any study which claimed to lead to useful results, and even science itself came to be looked upon as a rather inferior kind of activity The universities and the grammar schools concentrated on classical literature, and the study of advancing and developing science was left to voluntary bodies and to independent individuals During the eighteenth century, that period of intense industrial development, scientific discovery and invention were for the most part promoted by practical self-made men with no academic

training behind them, while the classical and literary type of education gradually became a monopoly of privileged groups.

At this time, too, social stratification became somewhat more rigid, and was hardened by a cement compounded of birth, wealth, and the non-utilitarian classical education The new realistic schools and academies catered for the lower middle classes. Though they applied new methods and taught new subjects they could not rival the social prestige of the old grammar schools During the nineteenth century the upper middle classes, partly in order to acquire social equality with the squirearchy, gradually abandoned these realistic schools and crowded into the new grammar or public schools, founded in imitation of the old classical institutions This trend is quite clearly seen even at the present day in our tables of comparative statistics, and it is discussed more fully in a special article on the role of the independent schools in England

The Industrial Revolution made necessary the adaptation of the whole educational system to the change in techniques and to the new distribution of population, both geographical and social In England the initiative came from local bodies, as Professor Judges makes clear in his article, whereas on the Continent the governments themselves tended to take the lead The problem was, and still remains, that of securing a supply of professional and skilled workers sufficient for the demands of the national economy, together with their proper distribution In its most extreme form this could imply detailed centralised planning and limitation upon entry to overcrowded professions The control of the universities and technical colleges that would then be necessary would run counter to established traditions of academic autonomy. In the Soviet Union and in other Eastern European countries such control would fit into the accepted policy of economic and cultural monopoly, in the West, however, freedom in the choice of profession and occupation is still upheld in principle, though it is limited by many conditions Technical education is recognised *de facto* but not *de jure*

Everywhere in the West the faculties of arts and of law are overcrowded, which means that those who pass through them do not find it easy to obtain posts which are satisfying in themselves and adequately remunerated The technical and scientific faculties, however, attract, in comparison to the needs, too few students, and this in spite of the fact that their products command higher salaries There has been a notable change in this respect since 1940, but the classical curriculum—especially in Latin-Catholic countries—still plays a predominant role Evidently, therefore, the reform of the entire curriculum and structure of institutions of higher learning as well as of secondary schools is called for, if there is to be a proper distribution of students between the various faculties This problem is discussed by Dr Zook and Dr Chambers It is clear that a division of

labour inevitably implying selection will make necessary a change in the traditional bifurcation of the schools into those intended for manual and those intended for intellectual occupations It is worth noting here that this traditional dichotomy is not only made obsolete by the second industrial revolution through which we are passing, but is also suspect on theoretical grounds Our contributors from all parts of the world stress this point with remarkable unanimity In England the lively controversy on multilateral and comprehensive schools goes much deeper than a simple discussion of the changes in organisation that it would be well to make It is connected with the unearned social privilege of the grammar schools and especially of the independent schools, and is not affected by the fact that the statistics collected by the Ministry of Education show that nearly one-third of the boys leaving grammar schools enter manual occupations In France the situation is more acute, largely because the curriculum is a more rigid one than in England, and because a classical tradition is even more dominant The Education Act of 1944 in England, and the projects formulated by the Langevin Commission, attempted to remedy these defects, but actual practice lags far behind the vision of the reformers In the remaining Western European countries the problem is well understood, but everywhere the traditional prestige attached to classics and literature is stronger than the will to reform This is made evident in the contributions from Belgium, Holland, and Germany The reforms are at best half-hearted attempts, not to be compared with the boldness of the English and French schemes

In the Eastern European countries one does, however, note a definite break with the classical tradition In Russia, Latin was never popular It was suspected by the Orthodox Church as the language of its rival, the Catholic Church, it had no connection with the Slavonic languages, and was out of line with the utilitarian traditions of the Russian intelligentsia which traced back to Peter the Great The Soviet Government simply abolished all classical education and no one expressed the least regret Scientific and technical studies gained a position of predominance, and were increasingly geared to economic and industrial needs The same development can now be witnessed in Poland and in Czechoslovakia, although old traditions and their close connection with Catholicism have helped the Latin *Gymnasia* to survive in the People's Democracies—at least until now. They have, however, lost the monopoly they once held as the only mode of entry into the universities In the United States, as well as in the British Dominions, the classical tradition never had roots as strong as in Europe. The shortened social spectrum of these new countries and the absence of a squirearchy or aristocracy prevented a classical education from being a special privilege of wealthy groups. Thus, the problem of giving a new orientation to university studies

appears simpler and more straightforward in those countries than in those with a longer history. Of course, this is equally true of the curricula of their secondary schools—there, too, the classical-mathematical tradition was never so strongly entrenched

The rise in the social prestige of technical education has important results it promotes the more rapid industrialisation of agricultural countries and it opens the way to higher education for large groups of the population who have no traditional attachment to classical schools In all countries the workers in factories tend to prefer the scientific to the Latin grammar schools, and, as secondary education becomes increasingly available to all, it tends in response to become more and more oriented towards the sciences, the technologies, and, in general, towards useful pursuits Simultaneously with this growth of realistic education, the composition of the student body —as regards its social origin—is changing Especially after the last war, in English-speaking countries, the policy of giving generous assistance to war veterans doubled the total number of students, and raised in a remarkable manner the percentage of those who are the children of workers In France the establishment of technical and commercial *baccalauréats* will help to achieve the same ends

The main visible outcome of such changes is that everywhere the number of students in universities has greatly increased, and their social composition is drastically altered As a result, grave doubts are expressed as to whether the universities will be able to assimilate all the newcomers, and complaints are raised that the quality of the education provided is falling The actual experience of many university teachers, however, points to the fact that older and more mature ex-soldiers, whatever may be their social origin, are better material than younger boys straight from grammar schools In this respect the practice of the U S S R and of Eastern European countries of establishing evening part-time secondary schools for adult workers and peasants deserves serious consideration Some tentative steps have already been taken in this direction, as for instance the establishment of State scholarships for adults and of emergency training colleges in England Needless to say, these trends converge and are gradually transforming the older conception of the nature of the university In the United States this transformation had already taken place before the war, and it led, as one consequence, to the establishment of junior colleges as an independent intermediate stage of academic education From one point of view this might be described as an attempt to preserve the old academic standards in spite of the almost universal college attendance It is too early yet to judge the results, and many liberal-minded Americans complain of a lowering of standards In the U S S R, State monopoly and planning have led to another solution The authorities calculate in advance the number of students needed in each field of study, and the candidates are then selected in order of merit and

distributed among the faculties In England, through the gentler mechanism of the University Grants Committee and the way in which money is made available for some developments and not others, a result is achieved not entirely unlike the one just mentioned.

The status of advanced technical study is to some degree dependent upon the prestige of the institution in which such study is carried on, and this is itself related to the organisational framework of those institutions, for example, whether they are independent of or incorporated within the universities On the European Continent higher technical colleges, whether they be *grandes écoles* in France or the higher technical schools of Central Europe, were established as separate institutions and even now are not fully incorporated in the universities In the English-speaking countries, on the other hand, faculties of engineering have long formed an integral part of the universities The growing need for academically trained engineers has gradually led to an equalisation of status of engineering and other students and to complete incorporation within the university of technical colleges formerly not considered of that rank In England, since the turn of the century, several colleges, which were at one time simply higher technical schools, have added other faculties to themselves and blossomed into full universities Somewhat the same tendency can be noted with regard to the training of teachers The old social division into elementary teachers and secondary school masters is disappearing as training colleges become more closely connected with the university In some countries, such as Scotland, the process has been almost completed, and a majority of elementary teachers are university graduates The new institutions of higher learning which will emerge from this and many other cognate changes will differ very much from the older traditional universities, both in the range of the studies they promote and in the composition of their student body Our comparative statistical tables give evidence of some of these trends. They set out what is perhaps the crucial problem of a democratic society—how to combine centrally planned selection of trained leaders and managers with equality of opportunity and freedom in the choice of profession.

Examinations

Every established craft, trade, or profession endeavours to protect itself in two ways First, it tries to avoid opening its ranks to too many persons, lest the price or value of the services it renders shall be diminished This tendency was well exemplified by the mediaeval guilds, and it will be recalled that the final abolition of their privileges was generally felt to be one of the chief services which the French revolutionary leaders rendered to the middle classes The mechanisms used to keep would-be entrants away included insistence upon a lengthy apprenticeship, restriction of

the number of apprentices accepted, and payment of fees to the masters Secondly, it tries to keep up professional or craft standards by punishing or expelling those who fall below them Again, before being admitted as a master, the apprentice, on completion of training, often had to present for approval a masterpiece, that is a piece of work which measured up to acknowledged standards. It is against this background that one should consider the 'examination' given in mediaeval universities to candidates who presented themselves for a degree The university itself may fitly be thought of as a guild of scholars, and the disputation, in which the candidate defended his thesis, was his masterpiece, after which he himself became a Master (of Arts) It will be noted that in such examinations, the question of selection enters only indirectly In principle, there is no explicit objection to the production and certification of an indefinite number of scholars, lawyers, or doctors just as there is no explicit objection to the certification of an enormous number of motor drivers All that is required is to make sure that they have attained the requisite and expected standards

The situation is of necessity different when the number of places or situations to be filled is strictly limited For example, what is to be done when a specified number of poor children are presented for free admission to a school? As Richard Mulcaster, Headmaster of Merchant Taylors' School, wrote in 1581 "There must be a restraint, and all may not pass on to learning who throng hitherward, bycause of the inconueniences which may ensue by want of preferment for such a multitude and by defeating other trades of their necessary trauellours Our next labour must be how to handle this restraint " And Francis Bacon, too, feared there might be " more scholars bred than the State can prefer or employ". As Sir Michael Sadler notes, the spirit of competition began at this time, in the seventeenth century, to affect educational methods and the award of scholarships It was applied first, at least in the United Kingdom, at Westminster In 1864 Dean Liddell described the system by which scholarships had long been awarded at that school to the Public Schools Commission, as follows "The challenge partakes somewhat of the nature of the old academical disputations All the candidates for vacant places in college are presented to the headmaster in the order of their forms; there are commonly between twenty and thirty from the fourth form upwards. The two lowest boys come up before the headmaster having prepared a certain portion of Greek epigram and Ovid's *Metamorphoses* which had been set to them a certain number of hours before In preparing these passages they have the assistance of certain senior boys who are called their 'helps' . . The lower of the two boys is the challenger. He calls on the boy whom he challenges to translate the passage set them, and if he can correct any fault in translating, he takes his place. The upper boy now be-

comes the challenger and proceeds in the same way. When the translation is finished, the challenger has the right of putting questions in grammar, and if the challengee cannot answer them, and the challenger answers them correctly, the former loses his place. They attack each other in this way until their stock of answers is exhausted. . . . The headmaster sits as moderator and decides the point at issue." This grammatical fight went on for some six to eight weeks and the ten boys left highest at the close of the contest were admitted to the foundation as scholars

Richard Bentley, Master of Trinity College (1700–42), introduced profound reforms in the system of awarding scholarships at Cambridge University He was certainly familiar with the Westminster technique and possibly influenced by it—at any rate, the effect of his reforms was to increase the competitive element and to diminish the importance of patronage. At about this time, too, written tests were first introduced—by Bentley, in 1702 'Senate House Examinations', in a tentative and unauthorised form, were introduced at Cambridge in 1725, being then oral and subsidiary to disputations in the school But a competitive element was present and by 1763 a written examination had become the deciding factor.

There is no space available for following up this history of examinations We may note, however, that a somewhat parallel evolution took place in every country. Talleyrand, in 1791, urged that no one should be admitted to the law schools, which were and still are a recognised gateway to public employment, without showing capacity "Let there be a long and profound examination . . . not a vain formality In the emulation of the students, there is a power of which the statesman should avail himself . . I propose that every pupil should undergo an examination during which he should be required to answer questions in every part of civil law . . This system of competitive examination would open to every one the way to fortune, for he who proved himself to be the most capable in public competition with his natural rivals would soon enjoy all the advantages of the public confidence" Somewhat in the same vein, Condorcet also wished to use public competitive examinations, organised by the local inspector of schools, to decide which children should be admitted to secondary and higher schools. His proposed examination was in part a system of nomination by heads of families, to allow character to be taken into account, and in part an oral test.

At about the same date, Jeremy Bentham, in England, proposed a complicated, ingenious, and somewhat fantastic scheme for selecting civil servants For the present purpose, the noteworthy feature of it was that a stringent examination had to be passed which involved a course of preliminary study. His advice was not followed, but his influence probably helped to put into the minds of those in whose hands decisions lay the idea of competitive examina-

tions as the proper mode of entry into the public service In 1854 the Indian Civil Service was opened to competition, and in 1858 the Civil Service Commission was appointed to test the qualifications of young men proposed for junior situations in any of the civil establishments of the Crown. In practice, this meant that even the highest posts in the State became open to those sons of middle-class parents who were unable to obtain patronage Later, in our own time, such posts became open, in fact as well as in theory, to everyone, whatever his social origin. In a word, the examination system, which with its written and oral tests was a new invention, had become a tool for social selection, an instrument for raising the level of individuals and groups It may be noted that it was itself inextricably interwoven with the educational system, of which indeed it is one aspect Useless to bemoan the fact that it affects and distorts the curriculum and the methods of teaching. Of course it does but it is not an additional piece of machinery, an accidental adjunct to the system, on the contrary it is an organic part of the whole To change it in any important respect means changing the whole

Examinations in China

When considering the introduction and growth of this system during the nineteenth and twentieth centuries, it would be short-sighted to ignore the influence of China, where for many centuries examinations had been used intensively Indeed, just as classical India is the most typical case of a caste system, so China (before the twentieth century) is the best example available of a society based upon social selection by examinations Hence, though the Chinese examination system has often been described, it will be worth while to consider it briefly here.

In ancient China, great feudal lords held all power and appointed, at their own whim, various minor officials But the central power grew and during the Han dynasty (about 200 B C. to A D 221) became firmly established. About the year 165 B C the Emperor Wen-Ti summoned to his capital candidates for public office and inquired into their moral qualities Under his successors, the idea of appointment according to merit became a principle. By A D 700 regulations for the systematic examination of candidates had been drawn up and remained in force, with some changes, until their abolition in 1905. After A D 1370, three degrees were granted corresponding more or less to the bachelor's, the master's, and the doctor's of British or American universities The tests were given respectively in the local county towns, the provincial capitals, and in Peking itself. Derk Bodde[1] describes the arrangements as follows· " The examinations took place within huge walled enclosures, inside of which were thousands of small brick cells, laid out in straight rows like the houses of a town. Each cell contained a

bench and table, and housed a nervous candidate. Every precaution was taken to prevent cheating. Candidates were searched before entering the enclosure, carefully watched while the examination was in progress, and not permitted to leave until it was over. Each examination commonly lasted several days and was of unbelievable difficulty In 1889, for example, out of more than 14,000 candidates taking the examination in Peking only slightly over 300 passed." As regards the tests themselves, they usually consisted of the writing of essays on philosophy and of poems The most exquisite and artistic formation of the logographs was insisted upon In the nine or ten hours, which was the average duration of each test, the candidate would be expected to write about 2,000 words though they cannot be formed at the rate of more than 300 an hour. To quote Bodde once more "The chief defect of this system was its emphasis upon literary style and a detailed knowledge of the Chinese classics, at the expense of more practical matters. Another was the failure of the Chinese Government to provide anything approaching a national system of education Hence most candidates had to prepare themselves for the examination at their own expense, and the inevitable result was that the majority of those able to take them came from the well-to-do Nevertheless the system had two important advantages It was open, with trifling exceptions, to all members of society, thus making it the world's most democratic means, before modern times, for selecting government officials. And it ensured the presence in the government of men of high education" Vestiges of patronage remained. Members of the imperial family and sons of high officials were freed from having to take the lowest degree. Every candidate had to obtain recommendations from trustees who testified to his good family background. Descendants of mandarins enjoyed a special and preferred position. Sons of barbers, bailiffs, musicians, janitors, carriers, and some others were excluded.

The ideas behind the system commended themselves to the eighteenth-century physiocrats They were praised by Voltaire, by Turgot, and especially by Quesnay, the 'Confucius of Europe' as he was called, in a book, *The Despotism of China,* which appeared in 1767. Undoubtedly, Talleyrand and Condorcet knew about it not to mention Jeremy Bentham It is interesting, too, to note that members of the East India Company's trading-post at Canton proposed the systematic training of employees and that the company established a small college for this purpose near London in 1806

Again, in 1847, Thomas Taylor Meadows published his *Desultory Notes on the Government and People of China,* the main purpose of which was "to urge the institution of Public Service Competitive Examinations for all British subjects with a view to the improve

[1] *Chinese Ideas in the West* (American Council on Education, 1948 p 27).

ment of the British executive and the union of the British Empire." In his view, " the long duration of the Chinese empire is solely and altogether owing to the good government which consists in the advancement of men of talent and merit only." Six years later, a Report was presented to Parliament on the organisation of the permanent Civil Service Though it is difficult to be certain that a direct connection exists, it is noteworthy that the Report recommended adoption of the Chinese principles regular tests open to all, promotion based on merit and not on patronage, a central board of examiners. It was this British precedent which chiefly influenced those who established a similar civil service system in the United States Nevertheless, the report presented by Thomas Jenckes to Congress in 1868 contained a chapter on the Chinese civil service. And anyone who is familiar with the French *agrégation* examinations, especially as they were until the First World War, will have no difficulty in spotting their similarity to the Chinese prototype.

Those who judge institutions from an abstract point of view may think that the Chinese civil service examination system was lacking in functional efficiency and relevance Provinces are not governed by poetry, and administrative skill is not necessarily connected with canonical correctness of literary style The chief value of the examinations, however, in the eyes of the Chinese themselves, was that the successful candidates had given proof of their extraordinary personal qualities—rather in the way that a magician, prophet, or warrior chieftain might prove himself by miracles, fortune-telling, or the destruction of enemies They had the right spirit and the right attitude to life—and this as personal endowment. To such people, so it was felt, the mastery of detail and of a businesslike efficiency would come very easily—or, at worst, they could be trusted to depute fatiguing routine duties to inferiors Without doubt, they could be trusted to give proof of their high quality by the harmonious tenor of their administration the restless spirits of nature and of men would leave them undisturbed. The high status formerly accorded in England to graduates in classics, and especially in ' Greats ', and the readiness with which they were trusted with high administrative positions, give evidence that there is nothing specifically Chinese about all this

Discussing such points, Max Weber [1] expresses the view that the educational ends pursued in practice and defended in theory seem to tend towards either of two polar opposites. Some educators consider their chief purpose to be that of discovering and awakening in their pupils latent qualities or gifts of a perfectly unique kind, which are either there *in nuce* or not at all These educators fit well into aristocratic societies, which stress heredity, that is, the equipment with which one is born, and where domination rests

[1] *Essays in Sociology,* translated by Gerth and Mills (Kegan Paul, p 426)

upon an assumption of inborn superiority. They tend to like educational theories of a Platonic type, which assume that some men are born with gold mixed into their souls while others have to be content with brass or iron Other educators, however, accept an opposing ideal they endeavour simply to impart specialised training and, in principle, they believe they can succeed with anyone, though to a varying extent These educators fit best into the rational and bureaucratic structure of domination. They prefer educational theories which stress the importance of fitting pupils for practical and administrative life by teaching them about the organisation of public authorities, business offices, workshops, scientific or industrial laboratories, disciplined armies

The ancient procedures of magical asceticism and the hero trials, which sorcerers and warrior heroes applied to boys, illustrate the confused and embryonic beginning of tests in accordance with the first type of educational theory. The educator endeavoured to aid the novice to be 'reborn' by acquiring a 'new soul' in the animist sense The tester endeavoured to find out whether the testee possessed a certain capacity which, however, would be purely a personal gift of grace In a shape so altered as almost to defy recognition such ideas are probably not entirely absent from the examinational procedures of the twentieth century On the other hand, a straightforward attainment test, applied, say, to drivers of motorcars, is in line with educational theories of the second type

The two poles of educational ends, however, do not stand simply in opposition without connections or transitions A warrior hero or magician also needs special training, and the expert official is generally not trained exclusively for knowledge Between the two extremes are found all those types which aim at cultivating the pupil for a conduct of life, whether it be of a mundane or of a religious character.

"The pedagogy of cultivation," says Weber, "attempts to *educate* a cultivated type of man, whose nature depends upon the decisive stratum's ideal of cultivation This means to educate a man for a certain internal and external deportment in life In principle, this can be done with everybody, only the goal differs If a separate stratum of warriors forms the decisive status-group—as in Japan—education will aim at making the pupil a stylised knight and courtier, who despises the pen-pushers as the Japanese Samurai have despised them. If a priestly stratum is decisive, it will aim at making the disciple a scribe, or at least an intellectual, likewise of greatly varying character In reality, none of these types ever occurs in pure form ... In China, the educational qualification has been a cultural qualification in the sense of a general education. It was of a similar, yet of a more specific nature than, for instance, the humanist educational qualification of the Occident."

The relation stressed by Weber between social structure on the

ıne hand and accepted educational ends on the other is reflected in he aims consciously or unconsciously accepted by examiners in he twentieth century The views of these examiners have been ffected by a changing social climate, and they have to meet de- nands which arise in consequence of an economic system in rapid ransformation Let us consider one particular example of the ffects of ongoing change—those which arise because mobility of abour, change of occupation, is more common than of old In the vords of Delisle Burns [1] " Jobs in production are more alike than hey used to be, but even so, a certain adaptability is obviously re- juired in the new generation To be quick in the uptake in a iew job is a capacity which can be tested, but it depends more in imagination than on memory, and tests of acquirements are herefore less valuable than intelligence tests of capacity " Again, t is typical of modern industry that its operations are controlled by mpersonal standards " The skilled foreman is less important he gauge mechanically operated is more important. The authority s not that of persons with traditional knowledge but of facts . Ve do not want to find out who will do what he is told, but who vill understand a rule well enough to follow that, without being old Respect for the facts is quite different from respect for a naster." In addition, many occupations now necessitate constant ommunication with different kinds of persons in all walks of life. Adaptability in personal intercourse, clear speech, quick movement, natter more than they did

In consequence of such changes, the traditional examination tech- niques have proved to be somewhat obsolete lack of relevance to heir purposes has become increasingly obvious Such procedures re suitable enough when the question is only that of evaluating nastery of a certain skill, understanding of well-defined fields f study, acquaintance with a body of written literature—in a word, /hen they are simply attempts to measure proficiency already ttained. For example, if one wishes to see whether someone can lrive a car moderately well, a satisfactory test is to ask him to do o. Or, if one wants to know whether a candidate knows enough ıractical chemistry to be given a post as industrial analyst, he may ıe given different materials and asked to analyse them Again, if he question at issue is whether a certain person is well acquainted vith Greek grammar and literature, questions can be set which vill give the examiners a rough idea of the extent and depth of the nowledge he has acquired

We have, however, repeatedly stressed that the chief social im- ıortance of examinations is their selective function and it is thus heir predictive value which matters An experienced analyst,

[1] In *Examinations and the Social Needs of the Modern World* (International Institute Examinations Enquiry)

hoping for promotion to a better post, relies upon his record and upon recommendations, not upon examination successes. These are needed when he is trying to get his first post that is, when it is a question of finding out whether the new man can be trusted to learn and to grow professionally The tacit assumption is that a young man or woman who has shown he or she can learn chemistry may be trusted to go on learning it Now, as long as the skills needed are very specific, this idea is probably correct, but such an assumption cannot be made with more general and vaguer attainments. Thus, testing future teaching ability is obviously more difficult than testing the quality of a shorthand typist And how is one to test the promise of a candidate for the higher branches of the Civil Service or of the Foreign Office, or his capacity to discharge varied and complicated duties?

Thus, while on the one hand, owing to the development of professionalism and to the increasing degree of bureaucratic organisation, the business of selection by examination grows in importance, on the other the difficulty of using this method of selection in a relevant and helpful way increases

Another feature of the situation has aggravated the complexity of the position During the last hundred years, a host of new subjects have gradually gained recognition as suitable for examination at all levels These include, for example, quite ' proper ' academic subjects such as geography or psychology, mixed subjects having immediate applications, such as engineering, economics, education (' Teacher's Certificate '), and purely practical subjects such as carpentry, bookbinding, craft work. From what has already been said in this paper, it will be clear that the ' struggle ' between all these subjects, if one may call it that, has reflected a struggle on a vaster stage and that it has not been free from social and even political entanglements. Anything which diminished the value of the classical, literary, and mathematical tradition was seen as lowering the prestige of the groups holding power and privilege, as a lessening of the weighting given to hereditary criteria. Of course, so it was. Nevertheless, very gradually subjects such as natural science, engineering, economics, sociology, have gained their place in the academic firmament and university degrees have been awarded for proficiency in them In so far as a degree was a necessary first step for admission to a whole range of professions, and in so far as these subjects tended to be more important in the universities founded in the nineteenth and twentieth centuries than in the older seats of learning, this meant that the gateway of opportunity opened more widely for the middle and working classes who supported these newer institutions and felt drawn towards more modern, realistic studies.

A consequence of all this was still further complication of the task of selectors such as those who preside over the Civil Service Commission in England or over similar bodies elsewhere. They

were being forced to rely increasingly upon the technique of examination and they had to attempt to equate marks obtained in Latin, say, with those obtained in chemistry or physics. Actually, it is quite probable that rather specialised and technical subjects are less valid predictors of ability in general fields than are somewhat vague literary subjects. Nevertheless, the newer subjects had to be admitted on grounds of 'fairness' because it was asserted that examiners should not influence the free choice of candidates among subjects of study. The situation was to some degree made easier by the fact that in many Civil Service examinations, as also in most examinations leading to the award of scholarships to universities, the candidates were given an 'interview' that is, the examiners saw each candidate separately, questioned him on general matters, and awarded a mark or grade.

It will be clear that the examiners themselves were here trying to measure the candidate's personality against norms which they held, usually unconsciously Anyone coming from a cultured home and having the self-assurance which is the product of a background where money has never been short would almost certainly do better at such an interview than one who came from the working classes—no matter how the examiners themselves might try to be fair

This point brings to light one of the mechanisms by which the old criteria of birth and money may influence selection. England provides a particularly clear example Here the most obvious external indices of position in the class-hierarchy are accent and mode of speech (very important indeed), habits of dress, of eating, walking, sitting, gesture, way of holding the body Such habits are most easily learned at home and at school The English public schools have always been particularly successful in giving their pupils an adequate 'social training', one aspect of which was precisely the acquisition of these manners Since the latter are useful for the acquisition of status, they have considerable value in the competition for jobs It is this fact which explains why many parents made great financial sacrifices to send their children to expensive schools, that is, to the nurseries of proper habits

It may be worth noting that, in fact, there was much wisdom in paying attention (partly unconsciously) to these trivial criteria, these indicators of status, when selecting candidates for the public service. The 'public' schools did—and still do—far more for their pupils than giving them a 'good' accent and the right taste in dress. They also develop—or at least try to develop—an austere sense of duty and a devotion to moral purpose. In the old days, there was at least a good chance that a young man who measured up well to the norms of behaviour would also be one who could be trusted In addition, what was perhaps more certain, he would fit well and easily into a team of others who had had an education much like his own and who came from the same kind of home.

He would know and accept, at least outwardly, the conventional codes and would thus prove an easy colleague.

After the First World War, the situation altered rather rapidly. The growth of the secondary (grammar) schools, the cheap provision of good clothes, the influence of the radio which standardised accent and manner of speech, all served to bring before the boards of selectors a very heterogeneous collection of candidates who, at least superficially, resembled one another—and this at a time when it was necessary to examine ever-growing numbers. In consequence, objectivity of standards was lost The inquiries carried out by the International Institute Examinations Enquiry in the nineteen-thirties, and published in books such as *The Marks of Examiners* (Hartog, Rhodes, and Burt) made clear to all what had been suspected by many The interview was shown to be a matter of luck—and so for the most part were the marks awarded for written papers The difficulties thus revealed in the fair and consistent application of the democratic criterion of selection by examination have by no means been removed since Experiments are still going on, and not only in Great Britain—for what has been said above applies, *mutatis mutandis*, to other countries As an example, we might describe briefly a mechanism of selection which has been employed in England when examining applicants for the higher grades of the Civil Service and for the senior branch of the Foreign Service Incidentally, it was adapted from the techniques used during the Second World War for choosing officers. A residential board of examiners was established near London and here the candidates came for from forty-eight to seventy-two hours During this time they were asked to do a number of psychological tests and to participate in group activities such as discussions, committee work, and the giving of short lectures The whole thing was so designed on the basis of a detailed job-analysis as to bring out the qualities considered important in doing the work of a higher civil servant.

During these activities, each group of seven candidates was observed by three members of the selection staff, one of whom was a psychologist, the other two being themselves civil servants. The recommendations of the board were made on the basis of what the staff members learned about the candidates from their behaviour during the tests. In addition, much information was available to the board from the candidate's records, the recommendations given by those who knew him, and the assessment made in the course of three interviews given to each candidate by individual members of the staff. The expressed aim was not only to test actual attainments, but to evaluate potentiality by considering attainment in relation to opportunity. Much effort is now being made to follow up the candidates selected by these methods, since the residential establishment is before long likely to be closed.

Vocational Guidance

The chief purpose of the above discussion was to illustrate how, at different periods and under the converging influences of a multitude of factors, methods of selection have changed. In Western societies two hundred years ago birth and patronage, family and money alone counted. They still do, but their influence is waning as the examination system gains in importance and complexity, or—as some would say, forgetting what the alternatives are and overlooking its undoubted value in maintaining standards and providing incentives—as octopus-like it wraps its tentacles ever more tightly around the educational systems [1]

There is, however, yet another matter which should be mentioned briefly vocational guidance and the testing of fitness for certain occupations In most industrialised countries, offices and laboratories have been established in which young people are interviewed and tested to see whether they possess the skills needed in certain occupations The secondary schools themselves, especially those which are selective and have high 'academic standards', usually test very effectively the capacity of young people to acquire book learning Vocational testing sets itself the task of discovering by quick, valid, and reliable methods whether young people, often of rather low academic ability, have specified manual or artistic gifts such as manipulative dexterity Many tests of high ingenuity have been devised, and the advice given in these laboratories or offices is nearly always wise and worth-while.

All too often, however, the parents feel unable to accept it The reason is not far to seek. A professional man, told that his son is well suited to be a carpenter or a shop assistant, may well distrust the test and endeavour to force his child to attempt, somehow, to enter an occupation with higher status and better income. When our Western societies have gone farther along the path towards social and economic equality, the chief objections to acceptance of the advice of experts will be removed Then perhaps, too, one will be able to guide the young towards occupations which will make them happy in life and which they will be able to do well, rather than to think chiefly of other matters

In any case, the work of the vocational guidance expert and of the 'careers master' will grow in importance In a simple rural society, both parents and children knew what kinds of jobs were available and the total number of different occupations was small. Nowadays, in advanced industrial communities, the total number of posts to be filled, all of which require some specialised ability, is

[1] Note that only those schools which have no selective function, such as the nursery schools in England, or which are attended by the whole population, like the high schools in the U S A, are free from the examination incubus

enormous and, for the most part, the work is being done out of sight behind the walls of factory or office. No parent now knows enough to inform his child about the sort of job he would be wise to choose, or what sort of job is open to him—and this, of course, quite apart from all question of social rise.

The school system will probably never be able to adapt itself perfectly to so complicated a situation At the moment, a crude process of vocational guidance is provided by the evening institutes, the trade schools, the *cours complémentaires* in France, the junior technical colleges, etc. Grouped courses, usually more or less relevant to the occupational pattern of a district, are offered. For example, there may be courses in building construction, engineering drawing, the making of optical instruments, mining engineering, and so on Young people choose among these according to their inclinations and to their estimate of the opportunities open to them as a result of their studies If they fail, or if they do not like the work involved, they change their courses or abandon the effort altogether, relapsing into the ranks of the very occupationally mobile semi-skilled or unskilled workers. Thus, the effect is that of a crude, expensive, rough but relatively effective vocational test in which qualities of character as well as of hand and mind are examined

In England, the tripartite division of the secondary school proposed *inter alia* by the Norwood Committee would involve a quasi-vocational testing of children. That Committee assumed that, at the age of about 11, it was possible to say which children were gifted for administrative, clerical, and learned professions, which for engineering, technical, and scientific, which only for manual and unskilled work. Psychologists and educationists have pointed out that this assumption is unsound and that, while the proposal may have a strong sociological or historical basis, it lacks all psychological justification. In fact, in so far as it is retained, a tripartite division will continue to exert a strong influence in guiding certain people towards certain occupations. But in that case it is an instrument for selecting in part at least on social grounds and not according only to occupational fitness Professor Havighurst's description of the effect of making available grouped courses including 'college preparatory courses' in American high schools, a scheme of reorganisation which makes them to some degree homologous with the proposed English multilateral schools, makes clear how the social criteria may continue to operate in conditions which superficially appear to ensure that they could not In other words, Professor Havighurst shows that even in an institution which aims at being a common school for all the children of all the people, the forces which sustained the European middle-class grammar schools of the nineteenth and early twentieth century may still be effective.

If children are to be classified at all at about 11 or 12 years of age, and, as a result, guided towards certain kinds of occupation,

it appears that the instrument upon which we must chiefly rely is the intelligence test—that is, if we abandon criteria of family connection or of money. It would, perhaps, be more correct to say that such tests are more independent of family influences and are more closely connected with individual capacity than any others we can devise for use with young children In their remarkable articles in this volume, Sir Cyril Burt and Professor Peel discuss the theory of such tests and lay bare the assumptions made by those who construct them These two papers should be compared with Dr. Biesheuvel's *Psychological Tests and their Application to Non-European Peoples* in the 1949 volume of the YEAR BOOK.

Intelligence Tests

In connection with intelligence tests, a very significant and interesting matter arises It is well known that Russian Communists object to their use in the Soviet Union and that indeed all research in this field has been forbidden there since about 1935 The easy argument to use is to assert that this was a simple reaction on the part of the authorities to the alleged fact that the tests picked out too many descendants of the former bourgeoisie and aristocracy and too few children of proletarians It seems certain, at least, that their systematic use proved disadvantageous to the children of the Asian tribes The Russians themselves asserted, with justice, that the tests always betrayed the traumatic signs of their birth in bourgeois France and of their rapid growth in capitalist America. They added that what they chiefly did was to select children whose qualities—ambition, competitiveness, desire to shine as individuals —fitted them well for the struggle that goes on in an acquisitive society but less well for life in a co-operative commonwealth This point of view is summed up in the report of a conference held in 1939 under the auspices of the Schools Institute of the R S F S R Rejecting the idea that large sections of children might inherit an inferior intelligence, and rejecting intelligence tests as a means of selection, the report went on "Given the right educational approach, the proper planning of the lesson and of out-of-school activities, and close contact between school and home, every child will reach the pass standard. There are no limits to educational work with children"

It is right to mention that the whole subject bristles with more difficulties than many people—though not the experts, as Sir Cyril Burt has pointed out—suspected twenty years ago. The I Q of an individual, it seems, is liable to some variation and is not entirely independent of environmental influences such as food, home background, etc. In spite of this, reliance on I Q as an instrument of educational, and thus of social, selection stresses, or appears to stress, hereditary as contrasted with environmental factors. Clearly, therefore, not only Russian Communists but all who stress the training

value of education will tend to minimise the importance and value of intelligence testing. The subject, incidentally, is one where it is well to take biological data into account, and it is discussed from this point of view by Dr Waterhouse in his article

The Role of the State

We have not so far, in this paper, taken into account the way in which public authorities, that is, national governments and municipalities, may intervene directly in the process of selection Until the eighteenth century such a question did not arise. The business of government was, above all, to provide a police and an army, for the protection of life, property, and public order Ministers might display an interest, often somewhat sporadic, in the promotion of commerce and industry, for example by making sure that the high roads were kept in repair, by protecting trade on the oceans, or by encouraging the immigration of skilled craftsmen. But the care of the sick, the young, the poor, was not generally looked upon as a prime duty of the King and his ministers It was widely felt that the best government was that which governed least the concept of the Welfare State had not been accepted

Industrialisation caused, of necessity, an enormous increase in the activity of public authority and this at a time when the idea of 'equality' was becoming the master-myth of the age, the decisive factor forming the social climate The leaders of the French and American revolutions shook the foundations of the belief that inequalities and social distinctions were due to the will of God and that they provided the necessary basis for social stability The Declaration of Independence, for example, proclaimed that all men were born free and equal At the time, this was considered a revolutionary paradox—it has since become a platitude quoted, however, uncomfortably and slightly apologetically

The ideas of liberty and equality themselves gradually underwent a great change The enlightened autocrats of the eighteenth century conceived them as implying equality of all subjects of the Crown before the law. This was a negative conception, which included no positive rights of citizens as safeguards against the autocratic rule of the King himself The liberalism of the nineteenth century went a step further and asserted that citizens should be free from interference by the State Although this was still a somewhat negative conception, it led to the acceptance of the idea of freedom of conscience and for economic activity Furthermore, religious, racial, and linguistic minorities as well as women, slaves, and serfs benefited from the consequent legal emancipation

Now, in the democratic and socialist communities of the twentieth century, the ideas of liberty and equality have acquired a positive content and become 'rights'—the right to work, the right to economic security, to old-age pensions, to an adequate education, etc.

Parallel to this development, the policy of the State in education has changed from non-intervention to growing control and centralisation, together with more compulsory legislation and the acceptance of financial liability.

Direct repercussions of these stages in the evolution of the idea of equality will readily come to mind In England, the removal of religious tests and the admission of Roman Catholics to the older universities as well, indeed, as the foundation of the University of London, of the women's colleges, of working men's colleges, the granting of university degrees to women, are all reactions to the liberal demand. In another way, the foundation of a Flemish university in Belgium and of a Roman Catholic university in the Netherlands illustrate the same tendency to grant equal rights of access to education to minorities and to dominant majorities

At another level, this is also the place to mention the schemes for granting bursaries, fellowships, scholarships, loans, to all young people who need them in order to attend secondary schools or institutions of higher learning Such schemes exist everywhere and provide an instance of the ways by which government action may open the doors of opportunity to whole groups of the population, helping whole classes to improve their standards and their status Parallel instances are provided by the Soviet Government in its efforts to raise the status of the Asian tribes to a level nearer that of the Russians and, now, of the British Government's educational activities in Africa It should be stressed that what we have here is a transformation of what was originally an act of private kindness, of charity, of helping a poor boy, into a public service of an impersonal kind aiming quite simply at general efficiency and equality

It is not necessary here to say much about efforts to equalise conditions between groups which differ in social status The structure of the political life of all States, reflecting as it does the social and economic stratification of the people, has drawn attention to social inequalities The activities referred to have often been described and analysed But there are other inequalities which have been rather less studied and which deserve mention. The first relates to the position of women In Europe, the effect of the Industrial Revolution, which diminished their importance as economic producers, was certainly to lower their status as a group Since then, as a result of much struggle and propaganda, they have succeeded in establishing formal equality with men in the educational field But it would be idle to pretend that even in the most 'advanced' countries this formal equality has been fully translated into actual equality The number of women holding high administrative or professional positions bears to the total number of women gainfully employed a pitifully small ratio. They are admitted into the professions, but the difficulty of rising in the institutional hierarchies is much greater for them than for their male colleagues. The criteria of selection are weighted against them.

As for less-industrialised nations, it is clear that the distance still to be covered is immense. This is particularly true, of course, in the case of Muslim countries, and the mention of these will show that, in fact, the power of the educational administrator to achieve radical reform is much more limited than might be thought Merely to provide secondary schools and colleges for girls is not enough if public feeling prevents full use of them. But public feeling will alter in time if provision is made. Thus we have here the paradox that if the government is to treat men and women equally it may have to favour the disadvantaged group, by meeting its needs more fully than demand might seem to justify.

Another inequality of educational opportunity which all governments are now endeavouring to remove is that between town and country. It is clear that a town child, growing up within easy reach of large secondary schools and university colleges, finds access to the educational levers of social rise much easier than does the child growing up in a village or on a lonely farm In order to equalise conditions between them, administrative and financial reforms are essential For rural education costs more per child than does urban education, owing to the greater scattering of the population On the whole, centralised administration and finance is better able to deal with the issues arising than is a system by which the greater share of the burden is borne locally It is this which helps to explain the highly centralised systems of New Zealand and Australia, which otherwise appear somewhat anomalous in the English-speaking world Such points, and others, are analysed in the U.S Office of Education report called *Education in the Forty-eight States* (1939), which well repays study In the U S A as in the U S S R. and, indeed, in all countries where the density of population is comparatively low or where, as in China or India, the masses of the population live in small villages, this problem of giving geographical equality of educational opportunity is a perplexing one Not only is it hard to provide schools with specialist teachers, but in the Asian and African countries it is most difficult to provide teachers at all. Men and women who have had experience of the amenities of towns have little desire to go back to primitive dwellings without water, sanitation, or electricity, and far removed from cinemas, libraries, shops, daily newspapers, and so on

It is interesting to study Australian or New Zealand education from this point of view. One's admiration is aroused by the magnificent schemes for correspondence education, visiting schools and teachers, school transportation, and so on And, of course, it is in this context that the problem of ' consolidation of schools ', so much discussed in the U S A and in Canada, must be studied—that is, the movement for fusing together several small educational authorities and several tiny schools, providing instead one or more well-equipped and adequately financed and staffed schools in which

rural youth may find facilities as rich and as varied as those provided in the good schools of a progressive town Such examples of far-sighted activity on the part of educational administrators provide invigorating evidence of what they can do when politics encourage rather than thwart their efforts In time, country children may no longer find it as difficult to get chosen for responsible posts

What has been said above is far from exhausting the list of topics that come under the heading of 'geographical equality' Technological and economic change is accompanied by constant redistribution of population Industrial workers are geographically mobile and this mobility grows as quickly as does social mobility. Everyone knows, for example, that the centres of great towns tend to empty themselves towards their periphery The nature of such problems is analysed by Professor S. de Coster in a remarkable and highly original article to which the attention of readers is specially directed.

Summary of Present Position

It will be useful, at this point, to summarise briefly some of the main conclusions to which our analysis has led The articles published in the present YEAR BOOK provide a rich store of illustrations which show that, beneath an apparent diversity of reaction to changing circumstances, there is an underlying unity of pattern, especially as regards the following

(1) In all pre-industrial communities social mobility, upward and downward, is small except during periods of war and conquest. On the whole, children follow the occupation of their parents Two relatively stable systems illustrate methods by which administrators, statesmen, priests, officials, may be selected at this stage the caste system of classical Hinduism and the examination system of China Everywhere at least two professions offer a pathway which makes possible the advancement of individuals to positions of power and affluence—the army and the religious corporation (Church) In China, the Civil Service was more important than these.

(2) Industrialisation increases both the desire and the opportunity for social rise. The number of professions grows larger and educational tests for entry into them are applied At first, schooling may play but a small part and qualities such as skill in commerce or mechanical inventiveness may be more important than academic ability At a later stage, when administration becomes more routinised and economic expansion slower, education and training count for more. Thus, in nineteenth-century Britain or the U S A, it mattered much less than it does now whether a man had obtained a university degree or not. The situation was sharply different in France or Germany.

(3) The structure of educational systems—that is, the methods of financing adopted, the location of schools, their curriculum, the prestige of various subjects, whether secondary schools are free—

is of great significance. It helps the social mobility of some classes or groups, and hampers that of others. For example, those who live in the country find it more difficult than do town dwellers to send their children to secondary schools Hence country children find it harder to enter professions. Each profession has a definite and well-recognised hierarchy and, once admitted, every member may climb up the steps. There is a relation between position in the professional hierarchy and social status Thus, through the difficulty of providing easy access to secondary schools for country children, these are relatively less mobile than town children.

(4) One feature of educational systems to which great attention has been paid by politicians and social reformers is the way they are adapted to the class structure of societies During the nineteenth century, in most Western countries, there grew up a system of selective secondary schools. Entrance into them depended upon the payment of fees and, as a rule, upon passing examinations in subjects not taught in the free schools open to the working classes It was almost, if not quite, impossible to enter a French *Lycée* from an *école primaire*, a *Gymnasium* from a *Volksschule* Since universities could be entered only from secondary schools, this meant, in effect, that working-class children could not enter the professions or the higher branches of the Civil Service This state of affairs was bitterly resented and criticised Bridges were built between the elementary (working-class) systems and the secondary (middle-class) systems and, in course of time, these bridges became ever broader and stronger, carrying a heavier traffic, until the privileged position of the secondary schools was quite destroyed

Evidently, what happened here was a complete revolution in the habitual method of selecting candidates for higher posts What had acted originally as a barrier to the advancement of able children of working-class origin, namely, the necessity of getting a secondary school education, became one of the principal tools for raising the status of a whole class

It is in this setting that we must view movements such as those towards the *école unique* in France, the *Einheitsschule* in Germany, 'Secondary Education for All' in England The support given to these movements implied a growing recognition by the working classes that dual systems gave special advantages to the middle classes, who used them to help their own children towards better posts and to diminish the competition that might come from the lower classes In countries like South Africa, as well as in some parts of the U S A, where colour of skin is an index of class or caste, the school system still operates in this manner Nevertheless, social and political change is so rapid that one can prophesy with confidence that, within a few years, secondary schools will everywhere be free and open to all They may remain selective in some countries. The selection, however, will depend not on parental

income or position, but on individual ability, this being interpreted as ability to learn school subjects together with a certain docility and adaptability

(5) This transformation of selective secondary schools into common schools for all the children of all the people raises problems for the classes of the population which have been in the habit of sending their children into the professions and into the universities. These problems are met, at any rate to some degree, in a variety of ways in England by the proposal to provide 'multilateral' schools, in the U S A by grouping courses in the high schools, for instance the 'college preparatory course'

(6) If secondary schools are attended by all they lose their function of selecting from the mass of children those who are suitable for entrance into the universities and into the professions, then that function must be discharged in other ways It can be left to the universities only for a short time, for the number of candidates and entrants would flood them out and cause great embarrassment There is therefore a tendency, in some countries, to introduce between the non-selective secondary school and the university an intermediate institution, performing somewhat the same role as the sixth form of the English grammar or independent school The American junior college, as well as the senior high school, is of this type So is the Belgian (reformed) *Athénée,* mentioned by Marion Coulon in his article So also are the 'third cycle' of the second degree proposed in France by the Langevin-Wallon Commission, and the tertiary schools proposed a few years ago in Czechoslovakia

(7) The rapid development of professionalism, together with the much greater technical and scientific knowledge needed to carry out efficiently the tasks which need to be done in modern societies, raises important and perplexing problems for the universities Numbers increase vastly, the methods of selection in use appear somewhat outmoded, the balance between literary and scientific subjects is upset Institutions which are, in principle at least, dedicated to the advancement of learning and the preservation of academic standards, are called upon to provide training of a professional kind and to select entrants to professions in fields which are somewhat new.

(8) The State itself increasingly intervenes in the process of selection. By providing scholarships and bursaries, on a growingly generous scale, it helps individuals to rise. And by direct administrative action, it raises whole groups. For example

(*a*) by administrative reforms it equalises burdens and also access to educational resources as between town and country, or between industrial and residential (financially rich) towns;

(*b*) by insisting on the payment of higher salaries to certain occupations and by providing free training for them; for example, hospital nurses and midwives;

(*c*) by making special grants to develop educational facilities in

backward regions; as the Russians have done in Central Asia or the British through Colonial Development Grants and by starting university colleges in Africa, the West Indies, etc

(*d*) by direct action, as in the states of Eastern Europe, where factory workers have been directed into universities, and where the State facilitates the entry of manual workers into universities by allowing them to take, as adults, easier entrance examinations,

(*e*) by providing new technical colleges or technical universities, which help to bestow upon scentific subjects and technological studies the prestige formerly accorded to classical and literary pursuits

(9) Taken altogether, these changes imply that the advantages formerly given by birth into the right family—that is, into a family where patronage could be reckoned upon or where there was enough money to buy, by direct purchase or by purchase through education, a much-sought-for position—are now quickly evaporating The tests applied for selection lay less emphasis upon social heredity and more upon individual capacity But these tests themselves are still a little crude, a little rough-and-ready They need developing—there is here much room for invention

Social Mobility and Social Happiness

At this stage it will be well to add a mild cautionary note, at the risk of being thought reactionary In this twentieth century, and in industrialised societies, it is usually thought that both justice and the greater happiness of the greater number are involved in fostering social mobility It is assumed, perhaps too lightly, that when the best and most intelligent individuals rise easily and quickly to the top, then public business will be discharged efficiently and everybody will be happier. Now, in a class-stratified society this would be by no means the case For high offices would be filled by persons some of whom at least might lack qualities other than an infinite capacity for taking examinations Again, young people who rose quickly would find, as many indeed do, that barriers had grown up between themselves and their parents—barriers making both miserable On the other hand, just as much unhappiness would be caused to, say, professional parents who saw their own children moving downwards into the mass of unskilled labourers In an equal community of brothers, where all human beings met as equals, such unhappiness, of course, would not arise

Another point worth taking into account is that certain cultural values, say love of poetry or appreciation of chamber music, are perhaps best handed on to the new generation in the home and by the parents In the past, the methods of selection used have ensured that those in high positions, in government or in the professions, have as a rule been exposed to these somewhat delicate

and easily destroyed humanising influences. A system of selection which tested only individual capacity might well be found also to do away, in the larger society, with the more tender plants cultivated within the family circle In other words, and more directly, it is quite possible that one relevant test for a would-be entrant to a profession might be to find out whether he himself came from a professional family A cynic would add that to ask this 'unfair' question might help not only to preserve professional standards but also to ensure that the entrants to a profession were well acquainted with its disadvantages

Again, let it be supposed that perfect methods of individual selection be invented and generally applied Then all gifted individuals would be picked out and sent into higher administrative and professional positions Many would consider it an unpleasing state of affairs if they could be certain that every higher civil servant or professor was more intelligent than every coal-miner or agricultural worker! And certainly the cultural life of the humbler occupational groups would be immensely impoverished by the systematic removal of all their abler members

Finally, it is by no means certain that selection by intelligence tests *et genus omne hoc* is really and absolutely just In past times a child who chose his parents well was wise and rose quickly But intelligence, energy, intellectual capacity, are also matters of genetic equipment and are, in high degree, hereditary Is it really fairer and more just to take these, and these only, into consideration?

Leadership and the Élites

It will have been obvious that the topic under discussion so far is identical with what is sometimes called that of 'the selection of leaders' or 'the selection of the *élites*.' Both the words 'leaders' and '*élites*' have, however, and especially in English, a somewhat unpleasing connotation. The Nazis made great play with their *Fuhrerprinzip* and spoiled the word 'leader' for serious use *Élite*, on the other hand, has an intellectualist flavour which smacks of a somewhat smug, self-attributed superiority. Yet both words have their use, and stand for ideas which we cannot do without in sociological discussion

Etymologically, '*élite*' connotes 'those best deserving to be chosen'. We should learn to think of an *élite* not as a privileged group, but simply as a group carrying a higher-than-average responsibility, a group ready to place its knowledge and its ability at the service of the community It has been well said that the masses of our industrial countries have as the slogan which embodies their aspirations—'well-being, security, dignity', that is, a desire for assured and rising material prosperity, for security in work and in life, and the full recognition of their social and spiritual rights. And it has been added that the slogan of the *élites* should be 'To

learn, to understand, to serve'. Le Play called them *'l'ensemble des hommes qui se dévouent'*. Understood in this way, the *élites* stand between the upper political, social, artistic, and scientific creative leaders and the masses It is they who help to give structure, direction of movement and stability to the community They should therefore consist of those who know most, understand best, act with most courage and wisdom They must not be a small, closed group but, on the contrary, must be numerous and well distributed at all social and economic levels The old idea of an *élite* conducting a human herd has no relation whatever to present needs The new *élites* should act as a leaven in the masses, serving them without servility or flattery, acting as centres of enlightenment, helping their brethren to reach towards the maximum of education and of self-fulfilment

If such ideals be accepted, it will be seen that among the chief tasks of the educational reformer is so to organise educational systems that those who are fitted to enter the *élites* be directed towards appropriate forms of education and training

All this can be put in other words Most nations are now explicitly dedicated, in principle at least, to the triumph of democracy, and it is in the ideal of democracy that people everywhere see the possibility of developing a more satisfying way of life Without going into protracted argument, it will at least be admitted that a democratic society is one in which each member has some effective opportunity of determining the manner in which he will make his individual contribution, and in which the accident of birth does not prevent him from obtaining an adequate education and social experience But, as T N Whitehead says in his *Leadership in a Free Society,* "democracy obviously cannot imply that all people are equal either in their natural endowment or in the functions they perform Not everyone can be the head of a State or the manager of an industrial enterprise There will always be pre-eminent men and women in any society. It is the manner in which these leaders are accepted, the conditions under which they retain that leadership, and the type of considerations that guide their activities as leaders, which determine the nature of the society and the opportunities of the individuals within it The essence of democratic leadership is that it shall be so exercised as to promote opportunities for the fitting initiative of those within the society, and in the manner which these latter desire . . . There must be no unduly narrow conception of their responsibilities and interests on the part of the leaders themselves . . . the object of their leadership is to achieve satisfying social living for everyone . . "

All nations and societies of the modern world are, at the moment, in a state of some disintegration and instability. The existing political tensions and conflicts are a reflection of these inner stresses. Rapid technological progress has been accompanied by a trans-

formation of the *mores* and by a lack of assurance in the acceptance of norms. Political change has been astoundingly rapid world powers have risen and fallen within a single generation The cohesion of classes, castes, and other groups has gone To quote T N. Whitehead again "The need of the moment is social integration, at least in the industrial civilisations. Our society shows no tendency to stagnate, that is to remain unchanged generation after generation, but it is in grave danger of falling to pieces like an over-driven engine This tendency to lose cohesion can be seen as likely to accompany a vigorous quest for technological advance, and so the present danger may be expected for so long as we can forecast the future Our sentiments lead us to wish for something more than mere cohesion, but at least some measure of cohesion is a first condition for the satisfaction of other social ideals"

It is for the leaders, responsible for the organisation of purposeful activities, to ensure this cohesion and integration, to help stabilise society, in part by continuous appraisal of the sentiments and understandings by which society is guiding its actions. And, evidently, in all societies every member is to some degree both leader and led —since leadership consists in obtaining the permission of a group to make an individual contribution to the life of that group. In democratic societies, moreover, leadership is shared in high degree and so is social responsibility "This spread of responsibility in a democratic society makes it peculiarly vulnerable to a break-down in the practical wisdoms of its members, and it suggests the extreme danger of introducing abrupt changes into the system, it also points to the duty of its members to inform themselves of the various social and political problems as these arise, for an ignorant or a negligent democratic society is a contradiction in terms"

By increasing the speed of circulation of the *élites*, we tend to diminish social cohesion—unless the leaders chosen are imbued with a high sense of their responsibility to the community, and are fully permeated by the common culture, the stream of experience, in which their brethren move It is this which points to the aspects of educational reform which are complementary to those previously mentioned. Not only to choose the *élites*, the leaders who will prove truly efficient in the discharge of their duties, but also to choose them in a manner which is just and felt by all to be just Not only to ensure for them a training and an education which fit them for their tasks, but also to ensure that they participate fully and richly in the common culture and experience. And, finally, to do all this without denying to every member of the community, whatever his gifts or his lot in life, access to those resources of culture and education which are the common patrimony of all mankind, the potential source of spiritual enrichment for all.

EDITORS.

CHAPTER TWO

THE THEORY OF MENTAL TESTING

I. Tests Their Purpose and Nature

Methods of Selection, Old and New

A CIVILISED society consists of an organised body of persons, in which different individuals or groups of individuals carry out different functions. A mere multitude of men, who, in Nietzsche's phrase, "formed just one flock of sheep, with no shepherd or bell-wether", would be, "not a state, but a mob" Even Plato's Utopian republic recognised that a division of labour was essential, and, according to the inherited fitness of their minds, his citizens were to be grouped into "leaders", "soldiers", and "work-people", with further subdivisions within each class With the increasing complexity of civilised life, this differentiation of function has become more and more marked, and it follows that in any modern State there must be, at some point in the life of the individual, a process of selection and allocation to determine what his particular function in the community shall be Is he to become tinker, tailor, soldier, or sailor? A farmer, engineer, or an office clerk? A teacher, a doctor, a government official, a jockey, or a cinema star?

In the past the selection was largely the haphazard outcome of what we should to-day regard as more or less irrelevant factors—birth, wealth, family tradition, and the like As the social and economic system has progressively developed, and the need for conscious control and large-scale planning has come to the fore, these older criteria have lost much of their importance. Nowadays vocational selection is in a great measure effected by means of educational agencies—schools, scholarship schemes, university examinations, and the more specialised requirements laid down for entrance to the medical, legal, and teaching professions. Yet even here the methods of selection have been rapidly changing To-day the traditional type of examination is often supplemented, and sometimes even superseded, by so-called psychological tests. The old-fashioned interview has been improved and refined, or even flatly discarded in favour of still more elaborate procedures devised by psychologists—the stunts, the house-parties, and the various probationary devices adopted by War Office Selection Boards, Civil Service Selection Boards, and the like—tests in the broader sense The fact that it is quite practicable to apply organised methods of

" human engineering " to large numbers of men and women at once has been dramatically demonstrated by the successful schemes for personnel selection developed in the Navy, Army, and Air Force during the recent war [1]

The Method of Tests

In nearly all modern selection-schemes the novel feature is the use of standardised tests, and, in accordance with the choice of topics planned for this YEAR BOOK, the Editors have asked me to take up this problem, and examine and explain the use of such devices from the standpoint of the teacher and educationist. Since the war, the number of teachers using tests of mental capacities and scholastic attainments has greatly increased Yet, as they would be the first to admit, many are quite unfamiliar with the theoretical justification for the methods that they adopt, and have to trust mainly to their personal experience or their own preconceived ideas to decide what are the value and the limitations of the methods they employ. The widespread use of such tests by trained and untrained workers has in turn provoked drastic criticism, and, as often as not, the critics themselves display an ignorance of the underlying theory quite as flagrant as that of the users they are criticising

These, then, are the questions I am asked to discuss What are the theoretical principles on which psychological testing is based? And what is the bearing of those principles on their practical employment in the education system?

Definition

In psychological writings, the term " test " is used in a technical sense Etymologically its adoption seems to have been suggested by a chemical, and not, as is sometimes supposed, a legal analogy It is derived from the Latin *Testum* denotes an earthenware pot or " cupel ", such as was used by mediaeval chemists in assaying metals and the like, especially when trying to discriminate between " noble " metals and " base " In this sense the English word is at least as old as Chaucer " Of oure siluer citrinacion, oure yngottes testes and many mo "[2] Johnson's definition is brief and simple " a means of trial " The notion that the modern usage comes from the Latin *testis*, and so implies " something that bears witness to a quality", rests on a popular confusion.[3] Yet, erroneous though they may be, these legal associations, suggesting the solemn testi-

[1] See P E Vernon and J B Parry, *Personnel Selection in the British Forces* (University of London Press, Ltd , 1949)

[2] *Canterbury Tales Yeoman's Prologue*, 265

[3] It is used in this sense in *The Philosopher's Banquet* (1604), " The faithful teste or witness ", and so, too, in *Othello*, I, iii, 107

mony of the witness-box or the demonstration of a judicial ordeal, have largely coloured the modern meaning of the word—the trying-out of a particular person, on a special occasion, in order to discover the real truth about him In psychological literature the introduction of the word is due chiefly to Galton and his British followers. It is curious that, despite its Latin origin, no cognate word appears in other modern languages.[1] Continental psychologists have in consequence to borrow the English.

For purposes of the present discussion, a mental test may be defined as *a brief scientific procedure for obtaining a quantitative assessment of some specified mental characteristic as observed in different individuals* Thus an ordinary school examination would be regarded as a test, in the technical sense, only if the test-material (that is, the questions), the mode of administration and marking, and the final calibration of the scale, had all been scientifically worked out beforehand on the basis of systematic research

II Criticisms of Mental Testing

Theoretical Objections

If we accept this definition, it will be seen that there are three specific conditions which the critic can question or deny With individual minds, it may be alleged, we cannot hope to devise any procedure which will be at once (i) scientific, (ii) quantitative, and (iii) brief Let us take each of these requirements in turn

First of all, it is argued that the individual mind is from its very nature incapable of scientific study. *Scientia non est individuorum* This is one of the oldest objections. It was used by Jevons to attack Galton's original proposals, and by Ward to attack Galton's chief follower in Germany, Wilhelm Stern " In human character ", says Jevons, " there is an unfathomable and inexhaustible diversity Faces are capable of infinite discrimination but who shall define or classify them? In spite of the boasted powers of science, we cannot apply its methods to our own minds and characters "[2] Ward's strictures are still more drastic Taking Stern as " the leading exponent of the new psychology", he wonders how far his

[1] The only native words available for translating the term are *examen* in French, *prova* in Italian, and *Prufung, Probe,* or *Urteil* (akin to our word " ordeal ") in German A few writers in this country and America who apparently hope (in their own phraseology) to " sell " the idea of tests to business firms or to government departments, have recently, it would seem, tried to impart an air of supposed medical efficiency to such devices by calling them " probes " But in modern English such a word is bound to imply an exploration for something hidden, rather than an experimental procedure designed to yield a precise assessment of an observable characteristic defined in advance

[2] *Principles of Science,* 1900, Chap XXX *ad fin*

Differentielle Psychologie is entitled to be called psychology at all "Certainly", he says, "it formulates methods, 'experimental and statistical', it essays to measure, or at least to graduate, and partially even to correlate But its ideal is 'idiographic', not 'nomothetic'." The notion of a "psychographic schema" for the *Ersforschung der Individualitaten,* with "a *Museum fur Seelenkunde* to enshrine and exhibit the results", he regards as manifestly ludicrous "Surely a better *reductio ad absurdum* of the naturalistic method in the study of the individual can scarcely be conceived." [1]

More recently, Allport [2] has revived much the same arguments in a qualified form. "Are tests", he asks, "of any solid value?" "Do they give true aid in understanding personality? Are they a genuine aid to educators, employers, mental hygienists?" "The answer", he says, "is only partially affirmative" And many of his younger disciples have bluntly said that means "almost entirely negative" Each personality, they contend, is unique, indissoluble, whole it cannot be split into distinct or separable parts, such as "mental abilities", "common traits", or other generalised and measurable characteristics "A description of an individual", says Mayer, "may be a piece of literature, a biography, or a novel But a science? No!" [3]

Secondly, it is urged, even if it were possible to describe a person in terms of separate characteristics, shared in common with others, nevertheless, from the very nature of the mind, those characteristics would be qualitative rather than quantitative "You cannot measure the properties of the soul as you can measure the height or the weight of the body" Like the ghost in Hamlet, "it is too noble for our gross methods"

And lastly we are told that, even if we admit that a quantitative measurement can be assigned to this or that mental characteristic, nevertheless it would be quite erroneous to suppose that this can be done by an artificial examination—by an "abbreviated experiment",[4] lasting at most for a couple of hours—in which only a small number of tasks or problems can be set, and only a small

[1] *Principles of Psychology,* 1918, pp 433–4 The sceptical attitude of most British psychologists at the opening of the century is perhaps best exemplified by a letter which Ward sent me when I submitted my first paper on "Experimental Tests" for publication in the *British Journal of Psychology,* which he was then editing "Yours is the first article to be sent to us on such a subject, and one of my colleagues goes so far as to hope that it will be the last I myself admire the amount of industry, ingenuity, and time you must have given to your experiments, but I cannot help regretting that it was not devoted to a worthier problem, instead of being spent on a dubious and transient topic, which holds little promise for the future"

[2] *Personality,* 1938, pp 4 f, 286 f, 449 f

[3] *Psych Bull,* XXIII, 1926, p 271

[4] Boring's definition of a "mental test"

number of reactions or solutions can be observed or marked.[1]

The conclusion drawn is that personality is so complex and elusive a thing that only an experienced judge of human nature can validly assess it, and that he can do so only by the aid of purely intuitive processes which he himself can scarcely explain, and not by indirect procedures of a would-be scientific type. Moreover, it is added, to be really trustworthy such judgments must be based on prolonged knowledge and observation, not on the results of a single sitting

The most vigorous and most vocal critics are the psychiatrists or (as they sometimes like to call themselves) the "medical psychologists" In the early days of intelligence testing, school medical officers and those concerned with the diagnosis of the mentally deficient insisted that the essential problem was to detect a pathological condition, and that none could do this except a trained physician who could recognise the anatomical stigmata and other clinical signs that were supposed to indicate defective intelligence, and would thus be "able to give a verdict based on insight and experience"[2] The same arguments were used of the neurotic and the insane And, since none of us enjoys perfect mental health, and all of us are a little defective and a little insane, a similar conclusion was drawn even in dealing with the apparently normal

To-day the psychiatrists have changed their ground Many are now willing to accept the educational psychologist as a junior colleague But they maintain that his function is merely to test the child's educational attainments, and (though here some doubts are still expressed) to apply tests of intelligence or the like But in any case the interpretation of the test-results and the final assessment of personality must remain, so it is contended, the prerogative of the psychiatrist who has been medically trained. Why it is necessary to have a medical training in order to be able to assess variations in temperament and character within normal limits is by no means clear, particularly as that training includes no instruction whatever in the assessment of such characteristics[3] No doubt, whenever there

[1] For a recent discussion of this point, see the papers by R B Cattell and P E Vernon on "Measurement *versus* Intuition in Applied Psychology", *Character and Personality*, VI, 1937, pp 114 f

[2] For the psychiatrist's standpoint see Alan Maberley, "Personality A Symposium", *Brit J Educ Psych*, XVI, 1946, pp 1–17, and for a reply, *ibid*, XVII, 1947

[3] It is not generally realised that, with but one or two exceptions, "medical psychologists" have had no formal scientific training in psychology proper, that is, in normal or individual psychology See the *Report of the Interdepartmental Committee on Medical Schools*, H M Stationery Office, 1944, especially the criticisms of the courses for the "diploma in psychological medicine" "if psychiatry is to acquire the same status as other branches of medicine, then", so the Committee concludes, "the post-graduate training and experience that psychiatrists are required to obtain must be comparable with the requirements in other branches"

is a possibility that some pathological condition may be involved, the co-operation of a psychiatrist is indispensable. But, as Mr. H T. Harben has remarked at a recent conference, "to say that, because a few may be mentally ill, therefore only a medically qualified psychologist is competent to assess the personalities of the normal, is like saying that, because only a doctor can diagnose a tubercular hip, therefore only doctors can be judges at a race or a high jump."

Reply to Criticisms

The criticisms I have summarised above are not without some element of truth Among teachers and scholarship examiners, there are not a few enthusiasts who, unaware that psychological evaluation, like medical diagnosis and chemical analysis, is a highly technical affair, endeavour to improvise tests of their own on the basis of what they sometimes call "common sense" psychology. They will jot down a list of mental qualities taken entirely from the popular vocabulary, they then draw up tests for these qualities, much as they would scribble out a set of questions overnight for to-morrow's terminal examination, and finally they apply their tests, mark the answers, and deduce their verdicts, in apparent ignorance of the many pitfalls that await this naive procedure [1]

The psychologist, on the other hand, realises only too well that a mental test, like a test in bacteriology or chemistry, can never be trusted unless it has been based on a thorough scientific investigation. Accordingly, he begins by ascertaining what particular qualities of the mind can be legitimately specified as amenable to abstract measurement In this preliminary stage his chief instrument is what is known as factor analysis Generally speaking, its results indicate that the mind and its functions are organised in a

[1] A glance at back numbers of the more popular educational journals will reveal numerous well-meant efforts of this kind, some of which have had quite a vogue for a while Just now, perhaps, the most flagrant illustrations are to be found in some of the suggestions for a "school record card" Those who have drafted them may without doubt be admirable teachers or inspectors, but their psychology is unmistakably home-made Current psychiatric literature is full of similar proposals by medical writers In a book on human personality published during the current year, the writer tells his fellow-practitioners that "attention to and retention of detail" are best tested by a "simple test like the ability to reproduce a set of five unrelated facts, such as a name, an address, a colour, and a couple of objects" He offers no evidence or references to show that what he calls "attention to and retention of detail" really form a general and unitary capacity, he leaves the choice of test-materials—the objects, the colour, etc—to the convenience of the moment, no data are adduced to show that failure to pass his test is highly correlated with failure to attend to and retain detail in ordinary life His definitions often consist of mere metaphors (e g "intelligence may be defined as mental stature"), and in support of his general analysis of human personality his main claim is that it is based on the "common-sense psychiatry" of a certain eminent American psychiatrist

hierarchy of "factors"—general factors like intelligence, more specialised factors like verbal ability, arithmetical ability, and the like, each of which can be further analysed or subdivided if required. The psychologist can thus formulate a precise definition for each of the qualities or "factors" he proposes to measure, and his definitions are usually "operational" definitions, that is, they state how each quality can be elicited and observed in actual practice. For each factor he uses not a single test but a battery of tests, and he knows to a close approximation with what precision each battery and each test within it will measure the factor in question.[1] Finally, in respect to the more important factors, he can state to what extent each seems to depend on genetic constitution, or (to put it in familiar but somewhat inaccurate language) how far each one is inherited or inborn.

Even with these technical improvements the use of mental tests may still seem open to the three main criticisms advanced above, and possibly a good many practical teachers, taking their stand on the platform of "common sense", will be inclined to add a charge of pedantry as well. Factor-analysis, it will be argued, as its very name admits, still claims to "analyse" the concrete individual into certain remote and hypothetical constituents called "factors", and any such procedure is bound to "disrupt the total personality into separate bits".[2] How can a bit of John resemble a bit of James? Allport perhaps has put the argument most clearly. "No two persons ever have precisely the same traits", and "if individuals cannot be compared with one another in respect of the same traits, what becomes of the psychology of personality as a scientific discipline?"[3]

The Study of the Individual

The notion that science must consist of generalisations (which relate only to the common traits of groups of objects) and can never set forth particular statements (which relate to specific traits of individuals) is an old one, but it is one that scientists themselves

[1] Here again it is unfortunate that most teachers are familiar with only one type of factorial theory, namely, the so-called two-factor theory of Spearman. This is a theory of a *single* general factor (intelligence), and developed as an attempt to simplify and replace the earlier multi-factor assumptions of other psychological writers who were endeavouring to develop mental tests, such as Galton and Binet in this country, and McKeen, Cattell, and Thorndike in America. Its popularity is, of course, due to its attractive simplicity. But no competent psychologist nowadays, I imagine, would admit that the structure of the mind can be as simple as that.

[2] P. E. Vernon, *Character and Personality, loc. cit. sup.*

[3] *Personality*, p. 297. The statement seems to be an echo of Hamilton's famous dictum "Every concept is inadequate to the individual". An excellent discussion of this long-standing problem will be found in *Logic Deductive and Inductive*, by my late colleague and predecessor, Professor Carveth Read, see especially pp. 34 f.

unanimously reject. The sun is an individual object, but astronomy is quite able to study it scientifically. What plausibility the argument possesses seems due to its ambiguity If it means that there can be no *complete* study or description of an individual object, it is perfectly sound But no branch of knowledge is ever complete And the fact that the sun does not possess *precisely* the same traits as other stars does not prevent the astronomer from giving a partial description of it in terms of common traits In spite of all that Jevons says about the uniqueness of a man's face and physical appearance, Bertillon and others were able to work out perfectly practicable schemes for identifying individual criminals in accordance with measurements of body and facial features

If analysis involves some kind of disruption, let us remember that, in a properly conducted study of the individual, any such analysis is always followed by re-synthesis Every psychological report includes, or should include, a general character-sketch as well as the isolated mental ages, educational ages, I Q s, and the like the detailed specifications, based on tests and ratings, must be fitted together by an integrative summary, showing the relations and interactions between the several factors or propensities of the mind Since I myself have so often been rebuked for " reducing everything to test-results ", may I quote the final sentence from the preface to my first book on tests? I there tried to " insist upon one fundamental truth tests infinitely more scientific than those set out below can still be but the beginning, never the end, of the examination of the child The scientist may standardise the method To apply the method and appraise the results demands the tact, the experience, the imaginative insight of the teacher born and trained " [1]

Measuring the Efficacy of the Tests

Here, as so often, the criticisms arise from partial or mistaken notions of what the psychologist is really trying to do " No tests of intelligence ", it is often objected, " can ever convey the real essence of a man's personality " But tests of intelligence are meant solely to measure intelligence To reject them because they do not " convey the essence of a man's character " is like throwing away the thermometer because it will not show which way the wind is blowing

The important question to ask is how far does this or that test succeed in doing what it was intended to do? Now this is a question that cannot be settled by an armchair discussion on the supposed nature of the individual personality as such It is a question of fact How does the psychologist answer it?

Consider a one-hour test of intelligence, which (we will suppose) a psychologist has just invented for children of 7. He does not, like a publisher's puff, sweepingly claim that " the teacher will find

[1] *Mental and Scholastic Tests*, 1921, p xv

this new test fulfils all that he requires" Nor does he, like the critic, dogmatically declare that "the thing is plainly ineffective" He asks *how far* is it ineffective, and *how far* does it fulfil what is required?

Let us, by taking an imaginary experiment, examine the kind of reasoned answer he might give We shall all admit, he will say, that no pupil of 7 can keep pace with the average child of the ordinary elementary school unless he has an intelligence (that is, an innate general intellectual capacity) at least equal to a certain definable level Now, at 7 or any later age, just 50 per cent of the age-group will fail to keep pace with the average child Accordingly we may begin by applying our one-hour test of intelligence to a representative batch of one hundred 7-year-olds, coming up to the junior school from the infants, and, if our test were perfectly trustworthy, we should expect every child who had less than average marks in our test to show less than average competence in the work of the classroom during each succeeding year of his school life To simplify the criterion let us take the year in which they will be transferred to the secondary school—11+, and let us review all the children we have tested when they reach that age What proportion of those who were below (or above) the average in the test at 7 will still be below (or above) the average in their work at the age of 11? Suppose that, out of the 50 who formed the bottom half in the original test, as many as 45 prove also to be below average four years later, and that, out of the 50 who formed the upper half, 45 prove also be above average four years later We can now pronounce our verdict Clearly the test is by no means perfect Its predictions have been falsified in 10 per cent of the cases [1] However, when we consider what unforeseen conditions are bound to affect the child's later development and progress,

[1] I call this measure of predictive failure a "misclassification coefficient" It is, I suggest, an index-figure that all teachers can understand, and it will to some extent avoid the criticisms on the ground of pedantic technicalities that correlation coefficients so often provoke (Its weakness is that, unlike the correlation coefficient, it varies with the selected borderline) There is an alternative method, popular at the moment, which consists in stating how far a new test will "discriminate" between two groups, which simply means showing how far the difference between the two group-averages is "statistically significant" During the past few years those who are endeavouring to introduce statistical procedures into medical psychology have employed this method very widely they announce that such-and-such tests have been found to "discriminate between" normals and defectives or normals and neurotics But such a phrase is bound to mislead the non-statistical reader The statistical "significance" of the difference depends primarily on the number of persons tested In this sense height will successfully "discriminate between" mental defectives and scholarship winners What is wanted is first a coefficient of correlation (biserial or tetrachoric, if the ordinary form cannot be computed), and secondly—and far more informative to the practical teacher—a coefficient of misclassification

we can hardly be surprised at that, the result is far better than we could have secured by any other one-hour procedure which did not involve a standardised test, e g a one-hour interview And, if we like, the final outcome can be expressed by a single figure, a "co-efficient of correlation", that is, a fraction which expresses the amount of agreement between the initial test-results and the final criterion In this case the correlation would be 0 95.

The same type of approach will supply an answer to the third of the three criticisms, namely, that most tests are too brief to give a trustworthy result We may readily grant that prolonged observation of each child for (say) a probationary six months after he had first entered the junior school would be far more effective But in practice, for many obvious reasons, a short, quick test is almost indispensable No doubt, with these speedier methods there are bound to be more misclassifications However, with the procedure I have outlined the psychologist or the psychologising teacher can now *measure* the loss in efficiency and set it off against the saving of time and expense

The Measurement of Personal Characteristics

But, as our critics will now reply, we are still begging the most fundamental question of all *can* mental qualities be measured? If they cannot, then no coefficients based on such alleged measurements can possibly have any value or meaning This, again, is a question which is commonly argued *a priori* From the very nature of the case, it is contended, the attempt to express mental qualities in quantitative form is at once impossible and ludicrous

It is ludicrous, we are told, because a teacher of common sense and experience can judge a child's intelligence in a few minutes, and can express his judgment in plain words, whereas the laboratory psychologist, with his array of Heath-Robinson appliances, takes a couple of hours to collect his data and another half-hour or so to reduce the results to figures on a scale, and by that time who knows what the figures really mean? To this we can reply that it is easy enough for the teacher trained in literature or the classics, and knowing little of scientific method and less of quantitative procedures, to gibe at the psychologist for his efforts to reach a statement that is at once exact and verifiable But can he show that his own procedure is as good as he claims? We all remember how Swift caricatured the scientists of his day in his tale of the mathematical tailors who sought to measure Gulliver's height with a quadrant and deduce his other dimensions by a rule and compasses. While Swift was scoffing at the Royal Society, Newton was writing his *Mathematical Principles of Natural Philosophy*—a work which was to transform man's view of the whole universe

But secondly, we are assured, even were it desirable, mental measurement would still be impossible. Who can put a figure to

the intelligence of Shakespeare, or assess the amount of verbal facility possessed by Byron or Burke? Kant, it may be remembered, declared that mind, because it is mind, cannot admit of mathematical treatment, and, since every natural science is of necessity mathematical, psychology can never become an empirical science. We can reckon the length of a man's arm or the breadth of his skull in centimetres or inches But where is the balance for weighing industry or honesty, or the callipers which will gauge the breadth of a man's reason or imagination? To measure a thing you need both a *zero-point* and a *unit* But how can there be a zero-point for memory? Even the weakest idiot and the unborn babe can learn something And how can you devise a unit for observation or attention which shall be the same along the whole length of the scale, and the same for everyone you try to measure?

III The Conditions of Mental Measurement

The Need for Measurement

Here at last we reach the real crux Here lies the problem that is at once the most important and the most difficult for the metrical psychologist to solve Kant was perfectly correct in his initial assumption As the advance of all science shows, from Newton's day to this (and, we might add, as the success of both commerce and industry sufficiently confirm) progress everywhere depends on accuracy, and accuracy depends on measurement "Had the schoolmen only measured," says Whitehead, "instead of merely classifying, how much they might have learnt!"[1] Mathematics is a tool, not a discipline apart It is, so the modern mathematician declares, merely a branch of logic Without numerical or algebraic devices, logical analysis and logical inference cease to be precise.

The Conventional Nature of Units and Zero-points

Now anyone who proposes to measure mental qualities ought unquestionably to begin by making quite sure what it is that measurement really implies[2] This may seem at first sight to be asking him to make a somewhat pedantic study of the obvious But it is only by considering the requirements of all measurement that we can

[1] *Science and the Modern World,* 1926, p 43

[2] The best-known book on the theory of measurement is N R Campbell's *Physics The Elements,* 1920 He holds that only certain physical qualities can be measured I have dealt with his objections to mental measurement in *The Factors of the Mind,* pp 118 f But I imagine few physicists or mathematicians would to-day be satisfied with Campbell's treatment The modern theory of measurement, like the modern theory of mathematics, derives ultimately from Cantor's theory of sets or classes (*Mengenlehre* see *Math Ann*, XV–XLIX, 1872, *et seq*) My own account is chiefly based on the definitions and principles laid down by Whitehead and Russell in their *Principia Mathematica,* whose work owes so much to that of Cantor, and of his successors, Frege and Peano.

possibly decide whether or not mental qualities will conform with what is required If they do conform, then we shall incidentally have discovered how best to proceed

Our task will be easier if we start by discarding some very common but misleading assumptions, which both test-constructors and their critics are apt more or less unconsciously to adopt. First, then, it should be noted that, even in physical measurement, zero-points and units are a matter of convention When we measure temperature, what we read off from the Fahrenheit thermometer on the classroom wall is merely the distance of the top of a column of mercury from an arbitrary zero expressed in arbitrary units. Secondly, it is important to realise that spatial measurement—the form of measurement with which we are most familiar—is by no means the only or even the most typical form. By adding two lots of water having a temperature of 50° we do not get one lot with a temperature of 100° Hence we need not be perturbed by the critic who tells us that, by adding the intelligences of two imbeciles with I Q s of 50, we cannot get the intelligence of one normal boy whose I Q is 100 We must, therefore, realise from the outset that mental abilities are not quantities which can be *physically* added as we add 2 or 3 nine-inch bricks or 2 or 3 pounds of lard Yet this is an assumption constantly made, more or less unconsciously, by school and university examiners For example, at a meeting of a certain Board of Examiners, I have heard colleagues asserting that for an intermediate examination they would be content with a pass mark of 30, that for an honours examination it should be raised to 40, and that, in medical subjects, it should be raised to 50 or 60, to make sure that only really good students can qualify as doctors But, except perhaps in an arithmetic paper, the idea that an examination mark expresses, as it were, the absolute number of items known out of a theoretical maximum is quite indefensible It is indeed precisely this kind of assumption that provokes, and rightly provokes, the type of criticism we have just been considering All that the marks can do is to give us *an appropriately spaced order of merit for the test in question*

Order Prior to Measurement

Mental measurement (and I should be tempted to argue physical measurement as well) is at bottom a matter of ordinal, not cardinal numbers Order, not quantity, is basic Now, few teachers would hesitate to place their pupils in an order of merit for their work "Top boy, Alfred, next, Andrew, third, Arthur," and so on. And, though they might not employ such pedantic language, nearly all would immediately agree that it is then possible to set up a one-one correlation between the order of the boys and the natural numbers, 1, 2, 3, 4, etc, taken in the usual sequence. For our purpose it would perhaps be better to number them from the bottom upwards

instead of from the top downwards. By doing so, we can at once obtain a rough set of measurements for the boys in question. The only drawback is that, if we treat the numbers so assigned as measures, we are tacitly assuming that the interval between Alfred and Andrew is exactly equal to the interval between Andrew and Arthur, and so on for every successive pair, and for that we have no justification. In fact, the differences between the boys at the top and the boys at the bottom will usually be much greater than the differences between the boys near the middle of the class. Our next and most difficult step therefore will be to consider how we can convert this simple order of merit into a set of marks which are genuinely additive.

But, before we go further, let us note what has been needed to make such a procedure at once possible and legitimate. First of all, we must be able to indicate something that the modern logician would call a "class" or "set", that is, a collection of objects, S, say, defined in a recognisable way, and possessing one or more variable properties, p. Thus, S might be "all boys aged 11 last birthday in the ordinary elementary school", and p might be "educational ability as shown by work in the classroom". But, further, the property in question must be such as to generate an asymmetrical transitive [1] relation, $>$ say: for example, "better than", or generally "more p than". Wherever you have such a relation, there you can erect a scheme of measurement. If, then, I can say of the members of any group of children, "Andrew is brighter than Alfred" or "Bernard is more industrious than Bobbie", I can at once devise a scale for intelligence or industry. But one of the most important points to observe is that the "set", the "property", and the "relation" must be, not merely designated by familiar names drawn from common speech, but defined operationally, i.e. defined in such a way that any interested person can pick out the set, identify the property, and recognise the relation.

How, then, does this lead to a scheme of measurement? By way of illustration, let us begin with things that can be visualised, say, the upright bodies of all the boys aged 10 last birthday in a given town. These bodies have the visible attribute of tallness or height. The mundane method of measuring height is to use an inch-measure or a foot-rule. But let us consider how we might proceed if we were Laputan mathematicians who had never thought of so obvious a device. Without using any such appliance we can nevertheless always say, of any two boys, Alfred and Bernard—A and B let us call them for short—that A is taller than B, or that B is taller than A, or that A and B look to be of just the same height. Consequently, given a haphazard collection of a thousand boys, paraded

[1] Let $S_1, S_2, S_3, \ldots$ be members of the set; then $>$ is transitive if, given $S_1 > S_2$ and $S_2 > S_3$, it necessarily follows that $S_1 > S_3$; it is asymmetrical if, given $S_1 > S_2$, it is impossible that $S_2 > S_1$.

in the playground, we could in theory arrange them in one long row such that the height of each boy, judged purely by eye, is either equal to or greater than that of the boy standing on his right With a group of this size, we shall find that, between each successive pair who appear to be visibly different, A_0 and B_0 (say), there are always a number who are equal, A_1, A_2, . . . A_n. (This may not perhaps be true of boys near either end of the row, in that case we can ignore them) Under the conditions specified, then, A_0 and B_0 can be correctly described as just perceptibly different Now let us ask A_1, A_2, A_n, B_1, B_2, B_n, etc , in short, all the intermediate boys who appear equally tall, to leave the ranks for the time being Out of our initial sample of a thousand, therefore, we now retain only those fifty (or whatever it may be) of whom we can truly say that each is just perceptibly taller than the boy next him on his right

The Equalisation of Intervals

Within the selected series thus remaining we can now define an *interval* We may say that by an interval between any two boys (A_0 and C_0, for example) we mean the group of boys in this selected series standing *between* the two we have named " Between " we shall take to imply " including " the tallest boy mentioned (C_0) but not the shortest (A_0) that is, we assume an " interval " to be what is technically termed a " half-open " interval We can now proceed to measure the interval We do so by simply counting the *number* of boys which the interval includes Thus the interval from A_0 to C_0 would be measured by the number 2, because the " interval " includes B_0 and C_0 And similarly the interval from C_0 to H_0 would be measured by the number 5 *It is now easy to show that, as thus defined and measured, the intervals are additive* for example, the measurement of the interval from A_0 to H_0 would obviously be $2 + 5 = 7$

For this selected group, then, we can now define the measurement possessed by any particular boy The number measuring his height will be the number of boys in the selected group who are smaller than he Thus A_0 will be assigned a height of 0; B_0, a height of 1, H_0, a height of 7, and so on The only novel feature here is that the rank-number is regarded, not as assigning a place or position in a linear series, but as specifying the proportion in the group below (or above) the member to be measured. Thus, if cardinal measurement is derived from ordinal numbering, ordinal numbering in turn is derived from an enumeration by cardinal numbers.

The Mean as the Best Theoretical Zero-point

So far we have been using A_0, the shortest boy in our group, as marking our zero-point, and the least perceptible difference as providing our unit But A_0 is not an individual that can be defined with any hope of permanent or universal application. It would be far

better to take as the zero-point the boy who is in the *middle* of the sample. Then, if the conditions of sampling are the same, the zero-point will (within a narrow margin of error that can in theory be made as small as we like) remain constant.

The Standard Deviation as the Best Theoretical Unit

In practice, too, we shall probably prefer to employ a larger unit Starting with the same series, we might perhaps find it more convenient to take as our unit an interval containing *ten* of the boys each of whom is just perceptibly taller than his neighbour on the right. Since it is generally possible, with varying degrees of accuracy, to judge equality of intervals as well as equality of heights, we might even have decided at the very outset to choose our selected set of boys in such a way that each boy appeared to differ from his neighbour *by the same large amount,* instead of being merely just perceptibly different This procedure has in fact been used for constructing test-scales of drawing, handwriting, and the like, but to my mind it is less satisfactory both in theory and in practice

In dealing with height, of course, it would have been much simpler to place a yard-measure alongside each boy, in which case the unit would be already provided, namely, the inch [1] But in the case of mental qualities there is no pre-existing yard-measure That, or its equivalent, is what we are trying to construct. And it will now, I hope, be obvious that with mental qualities we can readily adopt, at least in principle, the same procedure as I have illustrated for my imaginary example of height This being so, it is still open to us to choose whatever unit seems the most useful unit for theoretical and practical purposes

There are certain well-ascertained generalisations which will assist us in this decision. If we go back to our random sample of a thousand, and measure their heights by our newly invented scale, we shall find that the measurements are distributed fairly symmetrically on either side of the mean, very much as shots fired from a gun the distribution, in fact, conforms to the so-called " normal curve." When variations in a measurable characteristic are due to a large number of small influences, that is indeed the distribution that we should expect them to exhibit [2] Heights that are close to

[1] One of my former students, Mr T R Bridgeham, measured a group of 48 boys in this way, after defining his arbitrary unit of scale with the aid of a standard sample of 463 boys When the heights of the 48 boys were subsequently measured in inches in the usual way, the correlation was found to be 0 994, and when the arbitrary measurements were converted into inches by a linear regression, the average error was less than one-fifth of an inch

[2] Here, in introducing the notion of the normal curve, I have briefly described it by reference to the symmetrical " *frequency* distribution ", since that is the most familiar form Nevertheless, as the reader may have gathered from the previous paragraphs, the fundamental distribution is to my mind the sigmoidal (S-shaped) " *cumulative* distribution "

the average will be most numerous, and the giants will be as rare as the dwarfs. It follows that, if we merely rank a complete or random sample, those ranks will not mark equal intervals on our scale as previously defined However, by using an appropriate equation or a table for the probability integral,[1] we can convert the ranks into terms of that scale. Now with a normal distribution the unit of scale that is commonly used is the "standard deviation" (S D)[2] Thus, with a group of one hundred boys, numbered from the smallest upwards, the various individuals would receive scale-values something like the following 10th boy, −1 28 S D , 20th, −0 84 S D , 30th, −0 52 S D ; 40th, −0 25 S D , 50th 0 00 S D , etc [3]

The Scaling of a Mental Test

Now, in assessing height, our procedure required us to use a standard sample of boys as our scale of comparison, and, unless we could discover some practicable substitute, we should have to take

[1] This procedure was introduced into social statistics by Jacques Quetelet, Astronomer Royal, Belgium (1796–1874), and was adopted from him by Galton, who applied it to the scaling of mental and moral qualities (*Hereditary Genius*, 1869, pp 26, 377) Florence Nightingale, herself an enthusiast for social statistics, presented Quetelet's *Physique Sociale* to Galton, and the copy is still in the library at University College, annotated on almost every page

[2] The standard deviation is the square root of the mean of the squared deviations about the mean But for purposes of transformation from the percentage scale it is better to take as the mean the point corresponding to the 50th per centile, and to define the standard deviation and its multiples in terms of the corresponding percentages This will smooth out any accidental asymmetry or other minor irregularities

[3] Scale-values, expressed as above with the standard deviation (S D) as unit, are said to be in "standard measure" To avoid negative values 5 0 is often added to such values The unit is then known as the "probit" (i e "probability unit") Since the unit-steps are then very few, it is often convenient for practical purposes to take half the S D interval For these suggestions see C Burt, *Distribution of Educational Abilities*, 1917, p 49, Table XVII, "Standard Scale of Marking", or J P Guilford, *Psychometric Methods*, 1936, p 249, Table 49, "Scale Values on a Linear Scale of 10 Points" For examiners who prefer percentage scales or marks in terms of letters, a convenient scaling is that given in C Burt, *The Backward Child*, 1937, p 26, this scale is used in examinations for the Teacher's Certificate and other University examinations

Most teachers still seem to be acquainted only with the more popular units—the "mental age" and the "mental ratio" or "intelligence quotient" They are commonly unaware that an I Q obtained with one scale (say the Terman-Binet) is not comparable with an I Q obtained with another (say the Otis Group Test) There are, as I pointed out in early reports, many reasons why these units are unsuited for scientific purposes (cf "The Measurement of Intelligence by the Binet Tests", *Eug Rev*, VI, 1914, pp 36–50, 140–52, *L C C Report on Distribution of Educational Abilities*, 1917, pp 32, 47 f) Unfortunately, the more rigorous and efficient units still have a strange and formidable ring However, an increasing number of younger teachers are now becoming familiar with these technical devices from their training college courses

this sample round with us wherever we embarked on an anthropometric investigation. Similarly, in assessing handwriting we should be required to take round with us a standard sample of handwritings (fortunately a more portable scale), and in assessing intelligence we commonly use a standard sample of questions Let us, therefore, see how our fundamental requirements are likely to be fulfilled in these familiar instances.

Consider the items in the Binet-Simon series. They form a sample drawn from a larger class or set, which can be readily defined, namely, mental problems assumed to depend primarily on general cognitive efficiency (not on special aptitude nor on acquired skill and knowledge) Such items possess the variable property of "difficulty" Taking any two problems, we can always say that this particular problem is perceptibly harder than that one, or it is not Here we have the requisite asymmetrical transitive relation We can, therefore, always arrange such items in an order of difficulty. And our first step must be to put them in this order To do so we count the number of children who pass each item, and express that number as a percentage But this order does not of itself ensure that the intervals between successive items are equal On the contrary (a point which the amateur constructor of tests is apt to overlook) a random sample of test-items, like a random sample of persons, is apt to display something like a normal distribution [1] However, if we assume that the capacity of the children tested is itself normally distributed, we can, as before, convert these cumulative percentages to more suitable scale-values The proper procedure, therefore, is to collect a far larger sample of items than we are likely to need, and then pick out those particular items that form a sequence with equal intervals between each successive pair. [2]

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[1] An excellent illustration is provided by the items in the Progressive Matrices Test As Miss Keir has shown, when the relative difficulty of the test-items is measured in terms of the standard deviation (or "probits", i e "probability units"), we find that there are far too many items of medium difficulty, and too few that are relatively easy or relatively hard see *Brit J Psych Stat Sect*, II, 1949, pp 140 f This is still more obvious in the case of adults, where the chronological age of the individuals is irrelevant Binet, it will be remembered, relied largely on the assumption that during childhood intelligence develops by equal annual increments But this consideration does not so much alter the problem as introduce a special complication

[2] For the application of this principle to the Binet Scale, see C Burt, *Mental and Scholastic Tests*, 1st ed (1921), p 139, or 2nd ed, pp. 151 and 446–8, and references For the purposes of a non-technical exposition like the present, I have thought it better to adopt an intuitive mode of approach For strictly scientific purposes it is desirable to proceed by laying down precise definitions and postulates, preferably in symbolic form, and from these deduce the requirements of the proposed system of measurement by formal reasoning (cf, for a simplified attempt, *Factors of the Mind*, pp 118 f) It is curious that, in their discussions of the "essentials of mental measurement", British and American writers have

IV The Construction of Tests

Need for Systematic Test-construction

There are two great differences between the tests devised by psychologists and those devised by teachers or school examiners The psychologist's tests are or should be scientifically constructed, and they are or should be scientifically verified before they are applied for practical purposes I have briefly indicated (p 49) how the psychologist tries to verify the predictions that his tests are likely to give, and on this head I need say no more, since detailed descriptions of the technical methods now in use are readily accessible in almost any book on mental testing

Comparatively little, however, is to be found in such works about the methods of test-construction Most frequently the explanations have to be sought in unpublished theses or memoranda giving the first tentative accounts of some test or other that was new at the time For the rest they are usually picked up by research students through personal talks or collaboration with older and more experienced investigators Here I cannot hope to do much more than convince the would-be test-constructor that there *is* a theory of test-construction, and that the only way to secure good results is to observe well-established principles and rules, which are as technical as those for constructing an aeroplane or building a ship The amateur will not only fail he will fail to discover his failure until it is too late, and into the bargain bring the whole method into discredit

In drafting a question-paper for an ordinary examination the teacher or examiner seldom professes to follow any rigorous procedure He lets his mind wander freely over the subjects of the syllabus and the topics he has taught, and in the main trusts to free association or to memory for the suggestion of plausible problems The psychologist, on the other hand, works in accordance with a deliberate and systematic scheme He possesses as definite a notion of what is and what is not a sound procedure for testing the qualities he has in mind as a chemist possesses when testing a material substance for chemical properties The construction of such a test he regards as equivalent to planning a scientific experiment, and no experiment is really scientific unless it has been carefully designed to comply with recognised methodological requirements

hitherto not followed this line of approach Indeed, in this country the mathematical basis of the theory of frequency-distributions has been singularly neglected The most suggestive contributions are those of the French school see E Borel, *Leçons sur la Theorie des Fonctions*, 1914 also *id et. al*, *Traité du Calcul des Probabilités* (especially papers by Fréchet), 1924, P Lévy, *Calcul des Probabilités*, 1925, and above all C De la Vallée-Poussin, *Intégrales de Lebesgue, et Fonctions d'ensembles, et Classes de Baire*, 1934

Constructing an Intelligence Test

To illustrate how the psychologist attempts to build up a set of problems to cover every degree of ability, let us consider the task of inventing a graded test of intelligence So long as intelligence was supposed to depend upon some simple mental process like "general discrimination" (as Spearman, for example, believed), it was sufficient to take all the main sensory fields in which discrimination could be exercised—discriminating sound, discriminating light, discriminating weight, and so on, measure the child's acuity by means of the standard tests already available, and then calculate the average for the several test-measurements [1] Later work showed that a far more adequate assessment of intelligence would be secured if more complicated mental operations were employed "The more complex the process involved, the more completely do the results correspond with independent estimates of children's intelligence" [2] Accordingly, to test pupils of a given intellectual level, we must present them with the most complex type of problem of which their intelligence is capable—due regard, of course, being had to the time available for the tests

Grading According to Complexity

Now, how are we to build up complex tests of this sort? The complexity of a problem depends primarily on the number of terms it contains and the number of relevant relations between them A correct reaction or correct reply will therefore turn on the success with which the examinee is able to grasp and complete the pattern of relations linking the test-material into a systematic whole "George is to the right of Harry, Tom is to the right of George. Which boy is in the middle?" Here there are three terms (the boys), and two spatial relations connecting the pairs, and, in virtue of the relations, the whole has to be arranged in a simple pattern—namely, as three points on a single straight line with one point in the centre

Now, the study of relations, and of the relations between rela-

[1] Spearman's first contribution to the subject—his well-known article on "General Intelligence Objectively Determined and Measured" (*Am J Psych*, *XV*, 1904, pp 201–93)—provides a good instance of this procedure He takes the child's average rank (order of merit) in tests of the first three sensory fields mentioned in the text For rapid work he believed "a few minutes with the monochord" for testing pitch-discrimination would measure the child's intelligence as well as an examination in mathematics and languages combined Though his method was for a while followed by many younger psychologists, both his procedures and his conclusions were at the time severely criticised, and rightly criticised, by the practical teacher

[2] C Burt, "Experimental Tests of Higher Mental Processes and their Relation to General Intelligence," *J. Exp Ped*, I, 1911, p 95.

tions, forms the subject-matter of logic—of the "science of reasoning", as it is somewhat inaccurately described. If we accepted that label, we might feel tempted to identify intelligence with what is commonly known as ability to reason Indeed, "reasoning tests" as they are loosely called, have been found to supply some of the most effective types of intelligence test In point of fact, however, "intelligence", as the psychologist uses the term, is far wider than "reasoning" in the strict sense "Reasoning" means explicit logical inference And a problem which might perhaps provoke the intellectual adult (the teacher himself, for example) to use explicit inference will often be correctly solved by the child with the aid of a far more obscure and ill-formulated procedure—in fact, with the aid of what older writers would have termed "unconscious reasoning" Strictly speaking, such a phrase is a contradiction in terms It would be better to describe the process by Stout's phrase "noetic synthesis", that is, intellectual organisation In this sense, as I have elsewhere argued, intelligence may be regarded as "a function of the degree of organic complexity of which the child's attention is capable—of his capacity for noetic synthesis" Its development, therefore, consists in "an increase in the number, variety, originality and compactness of the relations which his mind can perceive and integrate into a coherent whole" [1]

The reasoning processes illustrated in the ordinary textbook of logic are commonly divided into two main groups deduction and induction, and they are limited almost exclusively to one type of relation, that "involving synthesis of subject and attribute" Not unnaturally, therefore, in their attempts to construct so-called reasoning tests in accordance with systematic principles, earlier educationists relied mainly on the traditional type of logical exercise Taking examples like those given in the usual textbooks (modified, of course, so as to fall within the knowledge and interests of the young), they built up syllogisms, problems in deduction, induction, and the like

Such problems are to be found in most of the older booklets containing verbal group-tests, and, indeed, so far as they go, they furnish excellent tests of reasoning, especially at the intermediate levels Consider the following

1 All English swans are white,
The big bird on the lake is black,
Is it an English swan or not?

2 Gold, silver, lead, iron all sink in water,
Gold, silver, lead, and iron are all metals
They say that this ball is made of solid "tunk", and "tunk" is a new kind of metal
Do you think that this ball will sink in water?

[1] C Burt, "The Development of Reasoning in School Children", *J. Exp Ped*, V, 1919, p 127

The first question can be solved by the average child at the age of 7, the second at the age of 8 Both deal with substances and their attributes or properties the one requires deductive, the other inductive reasoning, with a corollary.

The Simplest Form the Four-term Analogy Test

Now, it would be eminently useful if we could devise some systematic way of constructing a large number of reasoning problems, which increased regularly in difficulty, which involved a far wider range of relations, and which could also be presented in a way more economical of reading-time and printing-space Since problems like the above, being expressed in words, are somewhat easier for those who have a special facility in the use of words, it would moreover be advantageous to employ a type of problem which could be presented in non-verbal form—by pictures or diagrams, for example

At the elementary levels the simplest way of testing a child's capacity for relational organisation is to present him with a pair of related terms, and to ask him to invent another pair, related in the same way, with or without a third term as a starting-point For instance,

HIGH, LOW,
GOOD, . ?

Such a test involves a kind of elementary induction (to find the implied relation), followed by a kind of elementary deduction (to find the fourth term fulfilling the condition required) It provides us with an extremely useful type of problem Borrowing a term used by Aristotle to denote similarity of ratios, I called it the Analogies Test [1] In solving such a problem it would, as a rule, be wrong to say that the child "reasons by analogy" As we have seen, in psychology the word "reasoning" should apply to explicit inference only Now early experiments quickly showed that, while there are certainly a few children, of what may be called the "analytic" type, who will explicitly say to themselves in silence the verbal steps in the argument, there are others, of what may be called the "intuitive

[1] The term was in fact suggested by a passage in H. W B Joseph's *Introduction to Logic* (1906), from which a good many of my examples were borrowed "Analogy originally meant identity of relation, four terms, when the first stands to the second as the third stands to the fourth, were said to exhibit an 'analogy'" (p 532) Our earliest use of it as a test was in some preliminary experiments carried out at the Oxford Central School in 1907 It was more fully described, with detailed results, in my paper on "Experimental Tests of Higher Mental Processes", *J Exp Ped*, 1911, I, p 101 Stout proposed to call the constructive mental process which led to the actual solution as "relative suggestion" —a phrase which, he explains, is adapted from Thomas Brown He considered it the essential basis of what had previously been termed "unconscious inference" (see *Analytic Psychology*, 1896, II, chap on "Relative Suggestion") Spearman renamed it "educing correlates"

type" (and this includes the majority) who will rapidly jump to the right answer without quite knowing how they have reached the solution After one or two trial strokes, a good tennis-player, with a new racket and on a new court, can place the ball quite accurately just within the far corner, yet she could not tell you how she solved the implied trigonometrical problem As one of them once observed "My arms seem so much cleverer than my brain" We can, if we like, speak of such a process as unconscious inference, but the problem, complex as it is, gets solved automatically by the organising mechanisms of the central nervous system This non-verbal, half-unconscious procedure is especially apt to be employed when the task is set in non-verbal terms.

The More Complex Forms the Matrix Test

Now let us consider how we can elaborate this simple type of test-question, so as to build up, methodically and progressively, more and more complex problems to assess higher levels of intelligence There are three main devices we can adopt (i) we can multiply the number of *terms* presented, (ii) we can multiply the number of *relations* they involve, (iii) we can jumble up or disarrange the entire logical scheme, so that its relational structure becomes clear only after the terms as given have been rearranged to fit some standard order or pattern

In constructing tests of a more complicated nature it is helpful to set before the mind an abstract *model* (as we may call it) of the relations involved In logic the structure of a relational scheme is often represented by a spatial diagram But a diagram on paper is capable of representing variations in only two dimensions When the directions of independent variation are more numerous, the most natural device is what in higher mathematics is called a "matrix", i e an array of terms, with corresponding items placed below each other in rows, with the relations implied rather than explicitly expressed [1]

On page 62, in setting out the simple four-term analogy

[1] To the ordinary teacher the most familiar instances of such symbolic schemes are those found in the chapters of any ordinary school algebra dealing with the solution of linear equations, where the determinant of coefficients is usually written out in matrix form To the psychological investigator the use of matrix notation has been familiar since about 1930 owing to its vogue in factor-analysis The idea of employing matrix schemes for test-construction was first suggested to me by the remark in Bôcher's *Higher Algebra* (where he is introducing the theory of matrices) that "linear dependence is just a generalisation of the concept of proportionality" (1907 ed, page 35) This indicated how a 2 × 2 test of proportion might be extended to yield an $n \times n$ test of analogies, and several of our research students at once set to work on the possible applications The reader will find tests based directly on this principle in Stephenson's "non-verbal" tests, Cattell's "culture-free" tests, and Raven's "progressive matrices"

test, the arrangement I adopted is that of a two-by-two matrix. It is obvious at once that we need not restrict ourselves to two rows and two columns. Except in so far as we are inevitably limited by the span of the examinee's comprehension, we could extend the table, both horizontally and vertically, as far as we like.

Modern mathematicians have devoted considerable attention to the classification of matrices, and to the way in which problems expressed in this convenient fashion may be solved, and they have provided us with a convenient terminology to describe the main possibilities Thus the number of items in each row and in each column is said to determine the " order " of the matrix, the number of distinct relational systems contained in the matrix is said to determine its " rank ", and the arbitrary disturbance of the natural structure [1] is called a " derangement "

In mathematical textbooks, the terms are usually denoted by *letters* in the general exposition, and the demonstrations are illustrated by arrays of *numbers* in the arithmetical examples But Russell and others have taught us that mathematics and its various branches are really only special applications of the wider discipline of logic—of logic, that is, in its modern interpretation, which deals with the formal or relational structure of problems and their solutions. There is thus no reason why the terms in the matrix should be limited to numbers or symbols for numbers, or why relations between the terms should be confined solely to the arithmetical relations of addition, subtraction, multiplication, and the like The terms may be words, or ideas symbolised by words, they may be geometrical shapes, they may even be pictures or solid objects

Verbal Problems

Having set out the terms in matrix form, we can convert any complex expression into a complex problem by leaving one or more blanks in the scheme which the child has to fill in Consider, for example, the following table of words

MORNING	NOON	EVENING	(NIGHT)
SPRING	SUMMER	(AUTUMN)	WINTER
BUDDING	(FLOWERING)	FRUITING	WITHERING
(YOUNG)	GROWN-UP	ELDERLY	DEAD

[1] For purposes of logical inference the relevant items must generally be arranged in the form of a progression, generated by a one-one, asymmetrical, transitive relation The " progressive " (or " Aristotelian ") " sorites " is the best-known example It may be noted that in logic and mathematics terms like " progressive," " regressive ", etc , refer to the *internal* structure of a single relational system Raven has unfortunately borrowed the phrase to designate a number of matrices arranged in order of increasing difficulty To be consistent with the terminology adopted by previous investigators, his tests should have been called " Graded Matrices ", not " Progressive Matrices "

There are four items in each row and four in each column the order, therefore, is four-by-four But there is only one abstract system of relations, and this is common to all four rows It could be specified by some such highly generalised series as (i) rise, (ii) maximum, (iii) fall, (iv) end This serial scheme is then applied to four concrete cases, namely, day, year, plant, human being Since only one generating principle is involved, it follows that four row-terms and four column-terms—seven terms in all (one term appearing in both a row and a column)—would be sufficient to determine the whole set We can therefore omit one or more of the terms from each row (the bracketed terms, for instance), and the child can then be asked to deduce them from those that remain Such a problem I have elsewhere called a " two-way serial analogy " That, however, is a somewhat cumbersome description of its actual form For short we have usually referred to it as a " verbal matrix test "

Numerical Problems

We could, of course, construct similar problems with numbers, and numerical examples provide the clearest illustrations of the various types of exercise available, and of the various ways in which solutions may be reached Thus the ordinary four-term analogy, with numerical items instead of verbal, would appear as follows

$$1 \quad 3 \;:\; 3 \quad ?$$

However, unless the child is expressly told that the problem is a problem in ratios or " rule of three ", he might imagine that the operation required was not trebling the figures in the first row, but adding 2 to the figures in the first column The use of a matrix of higher order makes the requirements more definite This is shown by the following specimens of a three-by-three matrix

(i) *synclinal*	(ii) *isoclinal*	(iii) *heteroclinal*
1 2 3	1 2 3	1 2 3
2 4 6	2 3 4	2 3 5
3 6 (9)	3 4 (5)	3 5 (8)

In the first the rows and columns are in simple proportion, in the second they increase by equal amounts, in the third the relation is more complex the last column (or row) has now to be obtained by adding the corresponding figures in the first two columns (or rows) In the last case it will be obvious, even without trial, that the slight increase in the complexity of the relations has produced a decided increase in the difficulty of the solution. For one thing, a far

more thorough examination is required to discover what precisely the relation is

Generalised Relations

Now, as I have said, the relations need not be of an arithmetical type, and we therefore require a more comprehensive kind of theory which will apply to any type of relation, or indeed will apply when we do not precisely know what type of relation we are concerned with. In algebra we know how many premises or "equations" are necessary, before we can determine n unknown terms How are we to discover what number of premises are necessary before we can discover the nature of the unknown relation? These are questions that are dealt with in modern works on what is known as "group theory" There the relations are treated as "operations" rather than as mathematical "functions" [1] And this is the kind of theory we require in test-construction In fact, just as Molière's *bourgeois gentilhomme* obeyed the laws of grammatical prose without even knowing of their existence, so the successful constructor of tests obeys the rules of group theory, although he may be quite ignorant that there are such rules, or may even (as has happened more than once) suppose that he is the first to formulate them

The advantage of having a basic theory to guide us will be evident if we rewrite our typical matrix in a notation that will indicate how many operations are required at each step For example, the formal nature of the problem entailed by a three-by-three matrix may be represented by adopting a double subscript notation, e g

a_{11}	$a_{11}O_{12}$	$a_{11}O_{12}O_{23}$
$a_{11}O_{21}$	$a_{11}O_{21}O_{12}$	$a_{11}O_{21}O_{12}O_{23}$
$a_{11}O_{21}O_{32}$	$a_{11}O_{21}O_{32}O_{12}$	$a_{11}O_{21}O_{32}O_{12}O_{23}$

[1] Just as matrix theory may be regarded as a generalisation of ordinary algebra, so group theory may be regarded as a generalisation of matrix theory The reader unfamiliar with this topic will find a useful and suggestive account of the subject in the chapter on "The Theory of Groups" contained in Eddington's *New Pathways in Science* (1935) A more formal treatment of the subject will be found in the last chapter of C C MacDuffee's *Vectors and Matrices* (1943) The word "operation" is used above as a technical term We may say that a monadic operation O_{12} is defined, if, corresponding to the element, a_{11}, there is another element in the same field, namely, a_{12}, such that $c_{11}O_{12} = a_{12}$ A dyadic operation is defined if, corresponding to the two elements, a_{11} and a_{12}, and to a specified order of those elements, there is a third element in the same field, namely a_{13} such that $a_{11}O_{12}a_{12} = a_{13}$ Similarly for polyadic operations It is convenient to take O_{11} as the identity operator (the "stay-as-you-were" operator, as Eddington terms it) which simply converts a_{11} into itself It will be seen that a row of operators O_{11}, O_{12}, O_{13}, . . etc behave like a row of "factor saturations" such as are used in constructing a matrix of rank one, and similarly for matrices of a higher rank

In nearly all the problems likely to be used with children the operations will be commutative. Consequently, $aO_{21}O_{12}=aO_{12}O_{21}$, and so on. In other words, the temporal order in which the operations are carried out will make no difference to the final result It follows that in such cases the answer may be reached by working either along the rows or down the columns. Most examinees who adopt a thorough-going analytic procedure use one method of working (e g. working by rows) to obtain what they regard as a provisional or probable answer, they then check or verify this answer by using the alternative method (e g working by columns) Moreover, if the examinee has reason to believe that $O_{12} = O_{21} = O_{13}$, etc , further modes of verification are possible with the complete matrix Or alternatively we need give him only the framework of the matrix. As a minimum, three terms would in theory be quite sufficient to provide clues for a unique and determinate answer to a three-by-three matrix For instance, in the above example, if the examinee were given concrete values for the terms a_{11}, a_{12}, and a_{21}, then he could by double extrapolation deduce the value of a_{33}, viz., $a_{11}O^4{}_{12}$ This is a point that several test-constructors have not clearly realised Some even suppose that the entire matrix must be presented in full detail except for a single element They thus supply far more premises than are needed to determine and verify the correct solution, and the result is to confuse rather than to assist the child [1]

Spatial Problems

The elementary theory of operations can be applied to matrices with any type of content. It is perhaps most suggestive when applied to perceptual material. So soon as the existence of special abilities for verbal work and for numerical work was clearly established, and it was shown that current tests of intelligence, like the Binet scale or the commoner group tests, possessed a strong verbal bias, it became necessary to employ a different type of material. Thus, as I pointed out at the time, " in the analogies test, instead of words, pictures may be shown, . or instead of pictures, geometrical forms of various shapes and sizes " [2] For general purposes

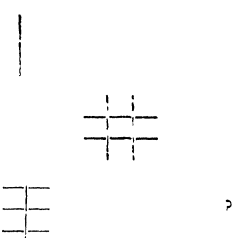
[1] By way of illustration I may perhaps cite one or two examples from the test-series referred to above, namely, Raven's " Progressive Matrices " (The original series was worked out by Mr Raven as a M Sc research in our department, but I have taken the 1938 version as being probably the most widely known) Here the set designated C10 could be solved more easily if the middle column and the middle row were both omitted Their insertion makes the test unduly hard for the younger children, but does not greatly alter its relative difficulty for the older Hence the order of difficulty becomes different for children of different ages Cf also the problem numbered D4

[2] *Mental and Scholastic Tests*, 1921, pp 222 f

the most convenient material of all consists of simple abstract designs set out on paper, which will give us a set of visuo-spatial matrices

For example, in our first problem the rows might consist of regular three-sided, four-sided, and five-sided figures (triangles, squares, pentagons) down the columns we might progressively change colour or shade (white, grey, black), or insert one, two, or three dots, and so on Here, the operators for rows, O_{12}, etc, would mean "add one more side to the figure", and the operators for columns, O_{21}, etc, "add one more dot inside the figure" (or "darken its shade") Evidently, therefore, the result is a synclinal matrix, a matrix of rank one It should be noted that nearly every examinee reads such an array of figures or diagrams from left to right along the rows, beginning with the top row, and then proceeding to the rows immediately beneath just as he would read an array of words or numbers Hence the simplest position for the unknown element —the gap or blank—is at the bottom right-hand corner In the case just described the determination of the missing element forms an exceedingly simple exercise But by increasing the number of terms or the complexity of the operation, we may obtain problems of any degree of difficulty

Alternatively, we can increase the difficulty by omitting more than one term from a three-by-three synclinal matrix, e g



Or again, if, instead of a monadic operation, based on a regular progression (as in the synclinal matrix), we indicate a dyadic operation, involving adding or subtracting two of the simpler elements, then the problem becomes definitely harder E g, the first row might consist simply of regular geometrical figures, the second row might consist of dots, increasing in number in the third row each element might then be obtained by inserting the dots just above it in the figure above the dots If, however, we were to put the compound figures in the first row, and require the dots to be subtracted, the task would become far harder

Finally, by deranging the matrix, we can make the problems very much more difficult without increasing either the number of terms or the complexity of the operations For example

white triangle	grey circle	black square
grey square	black triangle	white circle
black circle	white square	?

2	4	6	8
16	4	8	12
18	24	6	12
16	24	32	?

Now one of the things that the test-constructor most urgently wants to know is this how can we increase the level of intelligence required to answer a given type of test, without essentially changing its material? The amateur usually proceeds by choosing a more far-fetched type of relation But this nearly always transforms the test from a test of inborn ability to a test of knowledge accidentally acquired The more sophisticated test-constructor therefore, as a rule, relies on increasing the number of terms, or, less frequently, the number of relations involved in the essential operation In point of fact, actual investigations show that, in general, increasing the number of terms is only moderately effective, increasing the number of relations much more effective, and deranging the matrix most effective of all [1]

Intuitive Solutions

So far we have built up our test-problems by an explicit or analytic procedure But, as early experiments showed and later

[1] For an account of "derangement" as applied to relational structures, see C E Cullis, *Matrices and Determinoids*, 1918, II, pp 232 f In test-construction the simplest and most familiar example of this device is the well-known test of "Mixed Sentences" in the Binet-Simon scale The essential function of the "brain" is its synthetic, integrative, or organising function, and to organise things it is essential, not merely to combine them, but to combine them in the right order

This is a stage in logical thinking which is too often overlooked Take the following problem, based on a well-known argument of Darwin

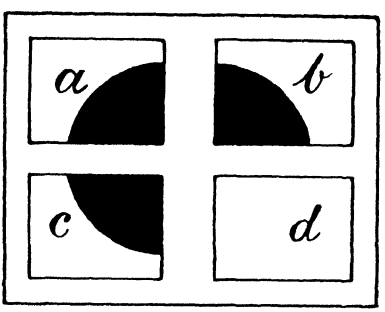
Field-mice devour the honey stored by the humble-bees, the honey which they store is the chief food of the humble-bees Near towns there are far more cats than in the open country Cats kill all kinds of mice

Where, then, do you think there are most humble-bees—in the neighbourhood of towns or in the open country?

Rearrange it as follows "Towns increase cats, cats increase deaths of mice, deaths of mice increase honey, honey increases humble-bees" The argument now has the form of "progressive sorites" (Welton, *Logic*, I, p 391), and the answer is now obvious The real difficulty lies, not in the logical inference itself, but in arranging the pairs of terms in the proper sequence, so that the first term of each new pair repeats the last of the preceding pair, and the asymmetrical relations between the successive pairs all tend in the same direction The only logician who expressly devotes attention to this part of the process is Charles Dodgson (Lewis Carroll) in his well-known logical exercises the real crux is usually to rearrange the terms

psychological theory has amply demonstrated, many people tend to solve their problems by an intuitive rather than an analytic procedure, that is, by an implicit apprehension of the entire composite scheme, rather than by an explicit formulation of the separate relations and the terms related Now, in seeking to apprehend verbal statements, we commonly attend to the component words (or component phrases) in succession, even when those words or phrases are presented simultaneously on paper most of us, indeed, are apt to say the words or hear the words mentally This is particularly true of the young And the same holds good in dealing with numbers But visible patterns, which possess no obvious auditory or motor associations, are often apprehended simultaneously rather than successively, they are seen as spatial wholes, particularly when they form or suggest a simple or familiar unitary shape. Hence it is with tests involving visible patterns that the reliance on the intuitive procedures is most readily demonstrated

For example, consider the problem in a four-term analogy depicted below



Those who attempt to solve the problem by explicit inference—"by comparison and reasoning by analogy"—will have to argue somewhat as follows "*a* and *b* are *left* and *right* quarters of *a* circle, and are derived from the *top* half of the circle, *c* is the *left* quarter of the *bottom* half of the same circle a fourth item, *d*, is evidently missing. If, then, *a b c d*, *d* must be the *right* quarter of the *bottom* half of the circle" But in this particular case very few actually adopt so slow and detailed a procedure. In a single synthetic glance most people perceive the pattern straight away as a quartered black circle with the bottom right quadrant missing; and they will immediately visualise what is needed to complete the black circular whole. Indeed, as I have related elsewhere, it was largely the discovery that many bright young children naturally tend to jump in this intuitive manner to solutions that are perfectly correct that led to the systematic use of visible patterns in matrix form.

Now the systematic constructor of tests, who has had no training in psychology, is liable to overlook this alternative approach Often he himself is prone to explicit analysis and reasoning, and almost unaware of the alternative mode of solution Indeed, in more than one publication the matrix test has been described as a test of "capacity to form comparisons and reason by analogy" [1] And where matrix problems have been arranged in a supposed order of difficulty, this has commonly been done *a priori*, by analysing the complexity of each problem No empirical verification of the relative difficulty of each (such as might be secured by comparing the actual percentages who succeed in passing each item) is undertaken or suggested

Those who are familiar with the psychological processes involved in the apprehension of composite wholes—of *Gestalten*, as they are technically termed—will realise that, particularly for the intuitive examinee, a number of subsidiary conditions come into play, and these require to be borne in mind in the construction and arrangement of test-material [2] Sometimes the impressionistic method is apt to lead to an erroneous solution which the test-constructor has not foreseen, e g

three,	four,	seven,
four,	five,	?

Here, with a group of children aged 8, "eleven" was given more frequently than "nine", because at that age the child is apt to trust to the auditory pattern of rhythm or rhyme rather than to the pattern of meaning [3] Again, when an obvious whole has to be broken up, the intuitive perception of the total pattern may prove a hindrance rather than a help Nor can we treat each problem in

[1] J C Raven, "The Comparative Assessment of Intellectual Ability", *Brit J Psych Gen Sect*, XXXIX, 1948, p 13

[2] The reader will find it interesting to study some of the published matrix tests from this standpoint in Raven's *Progressive Matrices*, nearly all analytic workers (e g science students) declare that C1 is easier than D1, and D3 easier than D5 But for children, circles with rings in them generally look much the same whether there are two, three, or four rings the young child rarely counts On the other hand, the sharply differentiated patterns in D1 and D5 make these tests much easier to the intuitive eye

[3] Spearman's favourite instance of proceeding by analogy is "Given two notes (C and G, say) forming an interval of a fifth, to sing a fourth note standing in the same relation to a third note as the second note does to the first" If the third note is D, this will as a rule be correctly done But in looking through a recent set of laboratory notebooks recording the results of such an experiment, I found a number of cases where the third note was G In that case most subjects sing the note C′, which of course is a fourth above G In some cases the three notes are C, E, and E again in that case the subject nearly always sings G (instead of G♯) E is of course a *major* third above C, but G is a *minor* third above E

the series in complete isolation from the rest Here again the untrained test-constructor trusts to logical analysis logically each problem is independent, psychologically it is not The entire sequence of problems also forms a whole, and progressively sets up, in the minds of the examinees, developing attitudes or tendencies Thus the relative difficulty of a given test-problem does not depend solely on its intrinsic structure it is inevitably affected by the test-problems which have immediately preceded it For instance, after a sub-series in which the child has had to *add* one or more shapes to reach the right solution, a problem in which he is required unexpectedly to *take away* a shape has its difficulty increased [1]

Extension to Other Kinds of Test

I have discussed the matrix type of test at some length, because it provides an admirable illustration of the possibility of, and need for, scientific method in undertaking the task of test-construction It shows how a wide field of problems can be systematically and comprehensively covered, how the problems can be graded in complexity, according to more than one line of development, and how they can be succinctly presented, whether in verbal or in non-verbal form At the same time it reminds us that a logical approach to the task of test-construction is by no means sufficient in itself psychological knowledge, and an actual trial of the final test, are equally indispensable

But because, from limitations of space, I have tried to explain the principles involved by reference to a single type of test alone, that does not mean that I consider the matrix test to be the only sound type, or even the best type Often, for various reasons, it may be undesirable to present the problems in this particular form Nevertheless, even then, as I think must now be obvious, their structure can often be helpfully analysed, classified, and graded by this device, just as in museums animals are often arranged by their skeletons There are, too, other types of relational structure which require different schemes of symbolic or diagrammatic representation Next to the matrix form, both in frequency and usefulness, is the kind of hierarchical scheme that is commonly illustrated in textbooks on logic by means of a genealogical tree this branching structure arises in arguments depending on a succession of alternatives—as in disjunctive classifications and the disjunctive mode of reasoning that is so constantly used in the inductive sciences This type of logical structure obviously lends itself to the same progressive

[1] In the series just quoted, E4 in its present position is much harder than it would be if presented in isolation, because E2 and E3 set up a temporary habit of *adding* the first two columns (or rows), whereas E4 requires *subtraction*

methods of complication and grading that I have described in the case of the matrix schemes [1]

However, in this short article my object has been not so much to show teachers and examiners how precisely they can construct new problems and assemble them into appropriately graded tests, but rather to demonstrate that the construction and the grading must be based on scientific principles, which are often highly technical and call for preliminary study and mastery Only in this way can the constructor of tests make sure of sound results, only in this way can he hope to escape the criticisms that are so often levelled against his methods and conclusions

CYRIL BURT

[1] The tests that lend themselves to this kind of analysis are graded mazes, completion tests with multiple answers, and the very useful detective story (which usually turns on hypothetico-disjunctive reasoning) The intending test-constructor will find it extremely suggestive to take several of the better-known and more-efficient test scales, and analyse their structure in the way I have recommended

CHAPTER THREE

PSYCHOLOGICAL TESTING AS A MEASURING OPERATION

THERE are two problems to consider in the theory of measurement The first concerns the choice of an *operation* to define a magnitude and the second concerns the *logical* postulates of classification entailed in its measurement Campbell (1, Chap X) and Jeffreys (2, Chap VI) give clear accounts of the experimental and logical basis of measurement as applied to the physical sciences I shall be concerned mainly with the first of these problems, that of the experimental operation—applied to psychological measures Professor Sir Cyril Burt (3) deals more rigorously in his article with the logical principles of measurement, but as the two aspects are not entirely unconnected I shall need also to refer occasionally to logical principles As we shall see, it is only by extending the concepts of sets, classes, and intervals beyond the older geometrical analogies that we can show that psychological measurement is as "real" as the measurement of physics Fortunately for the psychologist the wider and more rigorous treatment of the logical aspects of measurement has come from the mathematician, who seems to have felt the need to avoid references to intuitive length as strongly as the psychologist wished to extend measurement to other magnitudes than those reducible to length and time The mathematical reader is referred to the earlier chapters of Cramer (4) for a rigorous treatment of number sets and intervals

In this article I am concerned only with true psychological measurements such as are made when an intelligence test or an interest or attitude test is applied Here measurement is not in terms of the magnitudes of physics, as in psychophysical measurement, but is effected by comparing the responses of groups of persons to the mental tasks which comprise the test.

The Raw Data of the Physicist and Psychologist

Our first task is to bridge the gap which is popularly supposed to exist between the raw data of physics and of psychology Bertrand Russell (5) gives an extremely clear exposition of this problem in his recent book He is primarily concerned with sensations which form the crude data of physics, but we may extend his argument to mental experiences other than sensations and hence lead on to

the raw data of psychology. The reader is also referred to Whittaker (28, page 1) in connection with this point

Every observation is private to one person. Where the differences between the observers' points of view is small, the observation tends to become public Where observation consists of locating a single feature in a complicated situation in which the differences of viewpoint are more marked, the event is more private. If the emotions of the observers are also involved, the event tends to become even more private The data of physics are public observations. Psychology, on the other hand, is

> the science which deals with private data, and with the private aspects of data which common sense regards as public (5, page 58)

The publicity of a percept depends on the independent testimony which is available Suppose we consider the simple act of sighting a rifle on a distant point by one of a group of recruits under an instructor One recruit may insist that he has correctly sighted the rifle when, in fact, he has not done so, and short of other testimony the instructor would have to take his word for it—but he has other tests available. He has the testimony of the other recruits He may also produce the straight line connecting front and back sights and show that it does not meet the target Or, he may clamp the rifle down and fire it to confirm a hit or miss All this independent testimony tends, if there is agreement, to make the datum public It forms the basis of the method of physics, and consists primarily of a repetition of the observation by *different* persons or by the same person using different methods of approach or different instruments

What can we say of the psychologists' testimony? According to Russell, psychology is concerned with private data—those which cannot be verified in the manner outlined in the previous paragraph —and its method is primarily that of introspection Thus in the above example, if, after all concurrent testimony of physics, the recruit still insists that the rifle is correctly sighted, then the physicist ceases to have any more interest in him and he becomes a problem for the psychologist, who accepts the aberrant nature of the recruit's observation and may collect further testimony from him such as Does he understand instructions? Has he a deep-rooted fear of soldiering? Does he dislike the instructor?

This testimony depends on introspection and, accepting for the moment Russell's view that such evidence forms the entire testing of psychology, we see that in his verification the psychologist requires different observations from the same person The physicist holds the physical operation constant which gives rise to the sensory datum and collects testimony from *different persons* the psychologist holds the person constant and collects testimony by means of

different data, sensory, cognitive, affective, and so on This seems to be as far as we can take Russell's concept of private and public data of perception, but if psychologists were to restrict themselves to such a method of testimony they would not proceed beyond their own individual introspections That we do in fact go beyond such limits is clearly shown if, in the above psychological testimony, we ask the question is the recruit mentally deficient? and then attempt to answer it by giving him a mental test

In order to relate mental measures to physical measures we must extend Russell's argument beyond the data of perception to include *any* datum of mental experience There is certainly no theoretical reason why we should not treat a cognitive datum of experience in the same way as a physicist treats a sensory datum If, as Russell points out, such a datum is essentially private and we make it public by independent testimony, then there seems to be no reason why we should not apply similar verification to cognitive data This is what we do when we construct and apply an intelligence test Let us consider the analogy

man woman brother *sister*

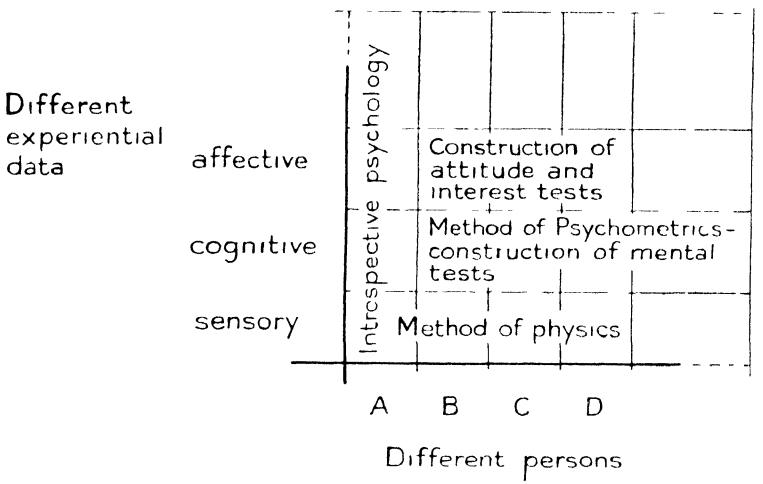
If a child is asked to complete this analogy we are obtaining from him a cognitive datum of experience which, like the sensory data of physics, is essentially private In making his reply the child may give *uncle* instead of *sister,* but testimony—that represented by the association of conventional meanings of the words "man" and "woman" and the like-implied association between conventional meanings of "brother" and "sister"—is so very strong that the datum *sister* has become public, and the test is objective, as we should say[1] Now it is quite apparent that the above testimony is like that which the physicist applies to sensory data, consisting of a verification of the same datum by different people in order to obtain the *norm*

But also, as in the former example of sighting a rifle, we may treat aberrations in cognitive data in the psychological way—namely, by introspective methods Thus, if the child is convinced that *uncle* is right we may not be satisfied that he has just not "seen" the relationship between *man* and *woman, brother* and *sister* If we were convinced that he could not perceive this relation we should judge him as possibly lacking in innate ability However, the child

[1] That the analogy is a test of logical relations but the restrictions of convention enter in the *meanings* of the words Such a test is a practical tool comprised of items devised by its constructor, these items are not generally infallible and conventional association enters where alternative relations and correlates are possible This is clearly shown in the need to validate such items and in the existence of ambiguous and bad items

may well see the relation but may be without mother or sister, or may have a young uncle to play with, or he may think the test is silly. This testimony is of the psychological kind depending on our keeping the person constant and collecting evidence from different introspections sensory, cognitive, affective, and so on

I have pursued these examples to make it clear that having accepted the view that sensory data are essentially private and that there are two ways of testifying as to their existence, there is no theoretical reason why other data of experience should not be treated in the same way We may illustrate the foregoing remarks in a schematic way as follows



From this diagram we see that a repetition of sensory experience by different persons gives the method of physics, a collection of different introspections the method of introspective psychology, whilst a repetition of non-sensory experience by different persons gives the method of psychometrics used in constructing and standardising tests We psychologists do not restrict ourselves to the introspective method of testimony, and we use the physicist's method of testimony whenever we make any inference concerning some other person's behaviour, whenever we apply a standardised psychological test, in fact whenever we compare two persons in respect of their mental qualities When we construct an intelligence test we give the same test to many persons, and when we apply it on subsequent occasions we compare their testimony with the responses of the persons first tested We meet practical differences in devising a quantitative science from non-sensory data in this way, but it is the business of psychometrics to study these problems of vari-

ability in the population, to select more or less, homogeneous psychological qualities, and to devise adequate methods of analysis

Also the example of an intelligence test shows that we cannot always assume that lack of ability causes "unconventional" responses We must establish norms by similar means for other qualities, affective and social, in order to account for the variability of psychological responses. Our present inability to explain such variation very fully gives rise to most criticism of psychological science, and contrasts markedly with the adequacy of the physicists' explanation of the variability of material objects

The psychologist has other problems, which seem to have no parallel in physics He must so select and arrange his test material that it provides the natural stimulus for the response that it is designed to evoke (6, page 114) Whilst this may not give much difficulty in tests designed to measure ability and attainment, in material intended for assessing more affective responses—such as attitudes, interests, value judgments—it presents a serious difficulty Another influence which seems peculiar to psychological measurement is the effect of experience or learning carried over from one test to a later one In microphysics there is a somewhat similar occurrence (see Russell, 5, page 39), but any parallel between the two phenomena cannot be more than superficial

Magnitude as defined by an Operation

I have attempted to show that the data of physics and psychology have much in common, those of physics, in fact, are special cases of the wider data of experience utilised by the psychologist, and that the physicist's method of verification has applications in psychometrics It follows from this discussion that the so-called real "tangible" magnitudes of physics are "inferential" and that the magnitudes of psychology need be no less real simply because they are not measured by operations involving the use of sense data

The magnitudes of physics are largely defined by the operation of measurement Eddington (7, page 252) wrote that the subject-matter of physics consists of pointer readings, and Brown (8, page 421) recently stated that

> science concerns the introduction of numbers into nature by certain conventional operations together with the process of counting

Dingle (9, page 322) almost equates the terms "magnitude" and "operation"

> every magnitude represents the result of a measurement of a physical quantity by a unique strictly specified process,

and later he writes that physical magnitude

> does not rest on the supposed existence, independently of measuring, of a stuff like physical quantity (10, page 65)

Curiously few references to the importance of the operation in measurement have appeared in psychological writings in this country, although several articles have appeared in American psychological publications, particularly in *Psychological Review* (29, 30, 31) This is perhaps because until the last decade most writers restricted themselves almost solely to psychophysical measurement, where the stimulus is physically measurable It is only when we examine true psychological measurement that we must, in virtue of their apparent differences, look at the operation of both physical and psychological measurement more critically R J Bartlett (11, page 423), in his 1939 presidential address to Section J of the British Association, drew attention to the problem when he stated that we might have to re-define measurement in psychology, since true psychological operations used in testing cannot conform to the conditions required for physical magnitudes Burt (12, page 128) refers to the experimental nature of the construction of a mental scale and emphasises that experiment only can tell us whether the intervals in a psychometric scale are additive Recently, I made specific reference to the importance of the operation in psychological measurement (13, page 74), emphasising that the operation must be psychological in nature

> mental measurement involves units which have a *psychological meaning*, such as the difficulty of tasks, speed of work, range of tasks, mode of response when ability and difficulty are held constant and so on

The differences metrically between physical and psychological measurement are not so great as a casual impression might suggest The American sociologist Lundberg (14, Chap II) states that failure to define magnitudes operationally has led to the view that some are more real than others, as, for example, when we compare physical magnitudes and a sociological magnitude such as socio-economic status This has resulted in endless futile discussion on the reality of sociological entities

> the only way to escape the impasse is to do what physics has done with its units, namely, recognise that they are all linguistic constructs (" artificial ") symbolising human responses to aspects of the universe relevant to particular problems which man faces (14, page 69)

Russell writes (5, page 241) that physics starts with the intention of doing its best for naive realism, but arrives at a physical theory

> which shows that there is no ground for supposing that the physical table or chair to resemble the percept except in certain abstract structural respects

Bridgman (15, page 30) writes that it

> would conduce greatly to clarity of thought if the operational mode of thinking were adopted in all fields of inquiry as well as in the physical

Failure to recognise that psychological operations are the essence of psychological magnitudes has given rise in the past to some rather ineffective attempts by psychologists to "explain" mental measurement Much of the trouble starts in the belief, implied or otherwise, that only the *physical act* of placing end to end can give true measurement, see Campbell (1, page 267, and 16, page 340) The psychologist may counter this by stating quite truly that any physical magnitude is in the last analysis a psychological process of observation (17, page 3), but as I see the problems, it is not sufficient to include physics within the realm of psychology It does not help the mental tester to know that sighting the two crosswires is a psychological process Russell (5, page 59) touches on the same problem when he says that although all physics is in essence psychological, the converse is not true We require a positive theory about mental measurement in terms of *psychological* operations

The same inability to conceive psychological measurement in terms of psychological operations lies at the root of the many doubts expressed that mental scales can be considered as real scales *under any circumstances* This last qualification is necessary since it is true that many mental tests as constructed in the past may not satisfy the conditions required for a zero-point and constancy of units I discussed recently (13, Sects IV and V), and hope to illustrate later in this article, how this might be achieved I quote from Culler (18, page 275) to illustrate the view that mental scales are not real scales at all

> There being no independent scale of stimulus energy, with which to compare the testee's performance, are we justified in calling the several items of a mental test a real scale, composed of *equidistant*[1] units, at all?

and refer the reader to a more recent article by Chambers (19) which shows the main consequences of such an opinion The answer to Culler's query is that the scale of stimulus energy is found experimentally in the responses of the persons used in the construction of the mental scale The additive element enters in the psychological operation, if at all, and whether the units can be made constant with a zero-point can only be found out experimentally Thus far, quantitative psychology resembles physics

This section on psychological operations can be concluded by giving some examples of processes which are capable of scaling

For the first kind of operation let us consider the psychological tasks which make up the familiar objective intelligence test (13) Such tests are composed of many items, comprising tasks such as

[1] The italics are mine Burt shows more rigorously, in his article, how this narrow concept of distance lies at the root of the trouble and that more recent generalisations in terms of number sets provide the necessary mathematical conditions for a zero-point and constancy of units

solving analogies, reasoning problems, ordering sequences, finding class names, and classification problems These tasks may be set in verbal, numerical, pictorial, or non-verbal media They are short tasks more or less unambiguous, and of all psychological material to date most nearly satisfy the unanimity required in the physicist's method of collecting testimony Though differing somewhat qualitatively, casual inspection shows that some tasks are easier to perform than others In this property of task difficulty we have a psychological *magnitude* defined by the operation of solving the task We scale the tasks in order of difficulty by applying them to a group of persons used for purposes of constructing the test The *position* of any task in the total test gives the number assigned to that item, just as the *position* of an inch on a foot-rule gives the number assigned to that inch

For a second example I shall take a psychological operation which may be used to measure interest or bent It is one recently devised (20), and shows fairly clearly how psychometric devices, normally associated with ability and attainment testing, may be applied to other fields It consists of a vocabulary test utilising words which have each at least two different meanings, one practical and the other in a less practical sense Examples are (i) the word *brace,* meaning a pair or a joiner's tool for drilling holes, and (ii) the word *vice,* meaning wickedness or an instrument for holding articles fast when filed, etc In the *mode* of the child's response we may have evidence of his interest, bents, or experience Such a test has something in common with the word-association test and the vocabulary test, and depends for its validity on how far it stimulates a genuine projective response Since the completion of the work on this test a reference by Thurstone (21) has appeared in connection with a similar use of homonyms He was interested in the social-mindedness of his subjects, and used homonyms each of which possessed human and social meanings and also literal and physical meanings

The complete list of homonyms with practical and non-practical meanings included such words as

strut, spar, fret, brace, vice, tie, tender, plane, nut, bulb, shaft, and pick

Our interest in this list is how these operations of giving a meaning to each of these words can be scaled to give a measure First, the practical and non-practical meanings were allocated to each word This presents some difficulty in the case of words where a clear-cut difference is absent The list of words was then given to a large homogeneous group of 11-year-olds and a practical (P) or non-practical (N) mark allotted for each correct meaning given It is very important to eliminate differences due to the difficulty of the words, and this was achieved by considering only those words to which

the total response P + N was the same. The influence of ability in the population was held constant by using a homogeneous group of children. Given that P + N is constant for each word, we may scale the items beginning with the largest and ending with the least P value. Items with a value of $\frac{P}{P+N}$ approaching unity will have least value as a measure of practical interests, since they will be given a practical meaning by most children, including even the least practically minded.

In actual application of the word-list, both for scaling and further testing, the validity of the test had to be improved by mixing "jokers" amongst the test words. These "jokers" were not homonyms in the fields defined, and were intended to allay any suspicions as to the real purpose of the test.

The test produced remarkably few double responses to the homonyms and this is some tribute to its efficacy. When applied it shows very consistent differences in relation to sex, experience, and age, but less consistent differences in relation to independent assessments according to interests. Although the above use of homonyms appears rather novel, no principles are involved in either the construction or application of the test which are not used in connection with ability testing.[1] We have merely applied them to operations designed to test a *mode* of response instead of an ability response.

I shall take my last example of psychological operations which may lead to psychological magnitudes from the research of Barker, Dembo, and Lewin (22) on the effects of frustration on young children's play activity. These workers observed children's play activity before and during the intrusion of frustrating influences, and noticed that during frustration the children's play tended to be less constructive. By analysing the observed records of each child's play the investigators arrived at a quality of his play response which they called "constructiveness". This reaction of the children, or quality of their play, was the *operation* which defined the psychological magnitude called "constructiveness of play activity". The magnitude was ranged on a seven-point scale, the classes of which were arrived at by analysis of the play records. To quote the authors (22, page 102):

> "constructiveness" can be used in two ways. One can distinguish constructive activity as opposed to destructive. On the other hand, constructiveness can refer to the degree of creativeness, elaborateness, or complexity of an activity. In this monograph we will use "constructiveness" in the second meaning in an attempt to approach an operational definition.

[1] Thus when a child has reached the item giving the limit of his practical-mindedness he will henceforth give non-practical meanings. This is analogous to the point at which a child ceases to answer the items correctly in an ability test.

In the analysis of the play the judges worked in conference as a team of three and so no evidence, apart from their mutual feeling of agreement, exists as to how far the points of the scale represent real differences In the case of the mental tasks and homonyms we have used the response of a group of subjects in order to scale the operations This method makes possible statistical tests of the significance of the differences between points of the scale which were not possible in the case of scaling " constructiveness "

Addition and Constancy of the Units of Psychological Measures

The additive property of the magnitudes of physics is closely connected with the experimental operation of constructing and applying the scale Only in the course of such operations can we discover whether a property is fundamentally measurable Jeffreys (2, Chap VI) tells us that measurement by addition of scales is a physical law, not a logical process Campbell (1, page 267) writes that a physical process of addition must be found for any additive magnitude

> By a physical process of addition is meant an operation which is similar in a certain manner to the mathematical operation of addition

Campbell gives two physical laws which must be fulfilled if a physical property is to be fundamentally (i e in the complete additive sense) measurable

Law 1 When a and b amounts of a property are added, the property must be such that $a + b > a$ or b

Law 2 The magnitude of a system produced by the addition of bodies A, B, C, depends only on the magnitude of those bodies and not on the order or method of their addition

That the psychologists' measures cannot conform to the physical requirements of adding end to end (length measurement) and rigidly sticking masses together (weight measurement) is so obvious that it is remarkable that these conditions should have been considered at all in relation to psychological measurement They originate from the peculiar operational conditions of physical measurement and take for granted the principles of rigidity and extension It is also possible that the traditional additive postulate of algebra had its origins in the observable fact that lengths can be placed end on end But the mathematician has extended addition far beyond such concepts, and we add classes, sets, frequencies, and members of classes When *addition is widened* beyond its narrow physical connection with length we find that all we require for a magnitude to be fully measurable is that *it should have a zero-point and the units should be constant* [1]

[1] It might save a lot of fruitless discourse if, in the wider connotation envisaged for measurement by the operationalists, we dispensed entirely with the term " addition " in the theory of measurement By so doing we should not sacrifice any degree of rigour

If we consider Campbell's two laws in the light of this development, we see that the first may have no meaning in psychometrics It is essentially concerned with bounded physical objects, and it is futile to speculate on *physical* properties of the mind The second, however, is very important and concerns the variability of human responses to test material Thus, if we read I Q s of persons A, B, C, instead of bodies A, B, C, we notice that this law is one which is obeyed in psychological phenomena only statistically I have purposely kept clear of these problems of variability and reliability (23) in order to show that *apart from them,* psychological measurement may satisfy the conditions required for fundamental measurement

I want now to consider briefly how the condition (8) of a zero-point and constancy of units may be achieved in measurement by mental tests, that is, in relation to the psychological magnitude which we call *intelligence* Thorndike (24, page 469) says that measured intelligence may show itself in three ways in altitude, i e level of difficulty attained, in breadth, i e proportion correct of items of given difficulty, and in speed, the number of correct responses in a given time If item difficulty is evaluated as subsequently suggested it may be regarded as a measure of altitude

The test is first given to a large sample to find the degree of difficulty of each item This phase corresponds to the " operation " of setting up a physical measure i e to the comparison of the class of test situations with a class of persons, from whose mental qualities we abstract their response to the given test situations To each item we assign a number corresponding to the number who fail to respond to it correctly This gives its difficulty These numbers do not necessarily increase linearly But we may then delete items at will from this order to obtain an array which increases linearly in difficulty. The test is then assembled so as to begin with the easiest item and end with the most difficult item In this way the numbers assigned to the different items for their difficulty have a similar meaning to that assigned to the inches on a foot-rule, where the position of any inch on the rule gives the number assigned to that inch

The test is now ready to apply as a measure in the sense of Thorndike's " altitude " or as a " power " measure (see Vernon, 25, page 24) It is given to a person, and the item at which he ceases to answer correctly is taken as a measure of his ability Actually he will often make mistakes before reaching his limit, in such cases we add the number of correct responses These deviations tend in a well-constructed test not to depart widely from the simple type of answer pattern Nevertheless, their existence constitutes a divergence from the kind of measure which is used in physics Such discrepancies are envisaged in Campbell's second law They are considered by Ferguson (23, Chap. VI)

The final application of the test consists of a comparison of a class of persons with a class of test situations, in which each situation has a number attached signifying its difficulty Thus we are really comparing one class of persons with another in respect of a common abstracted property—" response to the test situations " In this respect the measure is direct, much as a physical measurement like length is direct, save that, instead of objects, we are comparing classes of persons We are thus maintaining the general conditions of measurement and at the same time using a genuine psychological property for the measuring device

We now inquire what conditions must be fulfilled by the population used for evaluating task difficulty in order that the units may be constant and possess a zero-point Professor Burt deals rigorously with these conditions in his article, but I shall reproduce the examples I used in my previous paper on this topic (13, page 73) to show that the first population used must be *rectangular*, i e have an equal number of persons in each class of ability If this condition cannot be fulfilled we must at least know the form of the distribution in order to convert it to the rectangular type In my article I demonstrated the process of finding item difficulty by using physical objects and measuring-scales instead of persons and test situations If we do this we may then discover the conditions under which the estimated lengths of scales agree with the " real " lengths which we already know Let us compare a class of cardboard strips with a class of objects in respect of length

Suppose we have five strips, 12, 10, 8, 6 and 4 inches long, and sixty objects—five at 12 inches, five at 11 inches, and so on to five at 1 inch We lay each strip on all the objects and assign a number to each corresponding to the number of objects which it equals and exceeds

Real length of strip	12	10	8	6	4 inches
Number of objects equalled and exceeded	60	50	40	30	20 units

The estimated lengths of 60, 50, 40, 30, and 20 are evidently measured in units which are constant and possess the same zero-point as the real lengths They are in every way equivalent to the real lengths, except for the new unit The test of constancy and a common zero-point are given by the ratio

$$\frac{a_{\text{est}}}{b_{\text{est}}} = \frac{a_{\text{real}}}{b_{\text{real}}}, \text{ e g } \frac{50}{20} = \frac{10}{4}$$

In a second experiment, let us take sixty objects distributed as follows

Length	12	11	10	9	8	7	6	5	4	3	2	1	inches
Frequency	1	2	5	5	6	10	13	7	4	4	1	2	total 60

Proceeding as before we obtain the following estimates

Real length	12	10	8	6	4 inches
Estimated length	60	57	47	31	11 units

The estimated lengths are now not linear, and we see that the use of a non-linear distribution of objects would lead to false estimates

For the last example we may suppose the objects are distributed as follows

Length	12	11	10	9	8	7	6	5	4	3	2	1	inches
Frequency	12	12	0	0	12	0	12	0	12	0	0	0	total 60

This gives the following estimates

Real length	12	10	8	6	4	inches
Estimated length	60	36	36	24	12	units

Over the range of real lengths 8, 6, and 4 inches, the estimated lengths are linear, but have not the same zero-point, as the ratio test shows The displacement of the zero-point is caused by the zero frequency in the 2-inch and 10-inch objects

Estimation of a strip length by the number of objects which it equals and exceeds is analogous to finding the difficulty of an item by counting the number who fail to answer it correctly, subject to similar observations as were made in the earlier section on divergences in answer patterns The physical analogy of these divergences could be realised by the repeated use of objects whose dimensions were successively increased and decreased by distortion between each occasion when they were used to estimate cardboard lengths Thus a given object might exceed a given strip on one occasion and fail to exceed it on another, and so on

We may summarise these findings as follows. In order to obtain constant and additive units of estimated item difficulty

(*a*) the distribution of persons used for evaluating item difficulty must be *rectangular*

(*b*) the lower limit of the range of person ability must extend to zero ability, the upper limit is determined by the most difficult item used

(*c*) the units of person ability need not be as fine as the units of item difficulty, but by making the gradations of ability finer, a more sensitive scale of item difficulty is obtained

Relevance of Psychological Magnitudes

We have considered the data and operations which give rise to psychological magnitudes and we have taken the view that apart from the relative variability of psychological responses there is little

that really marks off psychological from physical magnitudes One other feature of measurement remains to be considered This we might call relevance [1] The magnitudes of physics, such as length and weight, have been developed from human practices and techniques which were closely connected with the life of mankind These magnitudes are relevant to human practice and experience If a magnitude were defined solely by the operation of measurement we could create new magnitudes having little relation to normal experience Such is the physicist's "entropy"

When we consider psychological magnitudes we find that lack of relevance to human experience is a serious problem, for most lay criticism of intelligence testing concerns its relevance to what people experience as intelligent behaviour A psychologist might define intelligence by a particular test, provided, of course, he could satisfy the earlier condition mentioned in this paper When, however, a new test is designed the psychologist is limited in his selection of material by a choice of the situations which he and society consider to reveal intelligent behaviour, and hence the magnitude which results is more or less relevant

Perhaps a weakness of Lundberg's treatment of sociological magnitudes is that he does not consider this aspect of relevance, for it is certainly one of the reasons why scientific psychology and sociology are finding difficulty in establishing themselves Measurement of any kind must be *practically* successful and as Ritchie (26, page 11) said in his Riddell Memorial Lectures

> a great stimulus to scientific discovery has been the failure to do something that was wanted, because *no plausible theorising can conceal a practical failure* (italics mine)

Conclusion

In this paper I have concentrated on the operations of measurement and have tried to show how psychological measurement by means of tests is related to the more familiar measurement of physics My first task was to show that, by extending Russell's notion of the privacy of sense data to include all experimental data, and by applying the physicist's method of collecting testimony to render these data public, we may arrive at psychometric devices not unlike the metric devices of physics The operation of measurement was next considered, and by taking what Jeffreys (27, page 838) describes as an idealist standpoint, that is, by defining magnitude by the operation of measurement, we saw that the differences between physical and psychological magnitudes are even less wide

The psychological processes of mental testing, interest testing by

[1] Relevance is not equivalent to validity, a test may be valid in relation to a given criterion but the same test may not be relevant to a criterion closely related to human practice and experience

homonyms, and analysis of play activity into "constructiveness" were then taken as examples of typical psychometric operations defining psychological magnitudes

With regard to the additive principle the view was held that a zero-point and constancy of units were all that was needed to conform to this condition Any suggestion that the condition of *physical* addition should also be required appears meaningless when thought of in relation to psychological data

In one sense, the psychologist must remain an idealist, since only by widening the concepts of scientific data and operations to include non-sensory experience can he lay the basis of a general theory of measurement But whereas those concerned solely with the narrower range of physical measurement may consider the attitude of the psychometrist as "idealist", for him as an investigator of mental events, the same approach is evidently the clearest "realism" Fortunately, the more recent advances in physics, mathematics, and statistics are tending to break down the barriers which separate psychometrics from more established sciences

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CHAPTER FOUR

HEREDITY AND ENVIRONMENT IN RELATION TO EDUCATION

It will be necessary first to consider some of the results of modern genetics and its ancillary sciences in order to get a clearer grasp of their relevance to the subject-matter of this essay Too many teachers and educationists are still an easy prey to theories and practices of education based on dubious interpretations or exploded theories of psychology, statistics, or genetics The social and biological applications of statistics only slightly antedate the beginnings of a steady advance in the science of heredity, and as in the absence of a predictive and fruitful theory of inheritance the former undertook to cover less precisely, but none the less confidently, much of the domain of the latter, we shall have to consider critically in the light of past errors the wide scope now claimed for the statistical approach to human heredity Since so many people fight shy of any mathematics involving much more than simple arithmetic, statistics forms a particularly fertile soil for the growth of authoritarianism, popularly conceded in the dictum that "anything can be proved by figures" The greater part of statistical theory requires a clear understanding of logical principles rather than advanced mathematics, and the applications to particular problems frequently involve no more than the logic of "common sense" However, in what follows we shall come across several examples of errors and misconceptions which have formed temporary impediments to development, and shall hope to use the experience, thus vicariously gained, in assessing the best method of attack on present and future problems

The bodies of all animals including man are made up almost entirely of cells There are many different types of cell, each adapted for its own special purpose, but there is a broad general similarity of structure Shape and size vary between very wide limits, but an approximately spheroidal cell might have an average diameter of about half a thousandth of an inch The cell is bounded by a cell membrane, which envelops what is called for convenience the *cytoplasm*, a viscous and highly complex mixture of substances, and the *nucleus*, which is almost a cell within a cell, having a nuclear membrane and containing *nucleoplasm* The use of the term "membrane" is by analogy, for it is not to be considered as a bladder-like skin but as part of the cytoplasm in a

different physical state (gel) The nucleus is the controlling centre of the cell, essential for its life, and contains within it certain thread-like objects known as *chromosomes*, whose fine structure is seen under high magnification to resemble beads threaded on a string, the "beads" being called *chromomeres* or *genes* The chromosomes are present in pairs, the two members of each pair being exactly alike in size and shape (although usually members of different pairs are recognisably unlike), and the number of pairs of chromosomes in any cell-nucleus of an individual of a given species is always the same in man there are twenty-four pairs (forty-eight in all)

Cells are the fundamental units both of structure and of function in animals and in plants They possess the power of reproducing themselves by binary fission involving a process known as *mitosis*, whereby two identical "daughter cells" are produced from a parent cell In the developing embryo all cells possess this power of multiplication, but the great majority of cells in an adult organism no longer go through this process, though in special circumstances they may again exercise the primitive power of reproduction, which is possibly a latent potentiality in all cells however specialised Cells possess also the property of *metabolising* that is, they assimilate materials ("food") from their surroundings and break them down chemically to produce energy and to obtain elementary chemical units from which to build and renew the cell structure, the waste products of metabolism are then excreted from the cell Thus the cell, seemingly quiescent under the microscope, is in a continuous state of lively activity it is in fact a complex and minute chemical factory, involving fine localisation of the different processes The energy requirements of the cell are met from the same source as supplies energy to so much of our industrial civilisation the oxidisation of carbon A lump of sugar, if set alight, will burn away with the liberation of heat, a form of energy, but this energy is released rapidly and at a high temperature Living matter, however, has an upper temperature range limited by the coagulation point of the proteins (highly complex molecules characteristic of living matter) of which it is so largely composed Consequently the release of energy from the eventual oxidisation of sugar is accomplished through the intervention of *enzymes*, which may be regarded as organic catalysts (regulators of chemical reactions), whereby the energy is liberated more slowly and at a much lower temperature Enzymes themselves seem to be protein molecules, in whose immediate neighbourhood certain specific reactions take place much more readily, possibly through the formation of intermediate superficial compounds with the enzyme, though at the end the enzyme is again present in its original form Enzymes and enzyme systems exist for every stage and type of metabolism, intracellular and extracellular, each one

specific for its particular reaction, and without them the processes of life would be impossible

We have referred already to the nucleus as the control-centre of the cell, so that it is not surprising to find that division starts with the nucleus, and that in fact the two daughter nuclei are completely formed and enveloped in their nuclear membranes before the cytoplasm has gone further than to reach an hour-glass shape, each section enclosing one nucleus Indeed it is because of the pre-eminent function of the nucleus that we shall concern ourselves only with cell-division as it affects the nucleus and its contents In mitosis each chromosome reduplicates itself, forming an exactly similar parallel "string of beads", this being due to an exact replication of each "bead" or gene making up the chromosome, so that they retain the same spatial relationship to one another This is frequently described, as it sometimes appears when watched, as a longitudinal division of each chromosome At a subsequent stage in mitosis, the two identical *chromatids* resulting from the splitting of any one chromosome separate and migrate to opposite sides or "poles" of the cell In this way two complete, identical sets of chromosomes are formed and congregate one at each pole of the cell, whose cytoplasm then divides to form the two daughter cells, exactly similar in every respect to each other and to their former parent.

We must now consider a little of the details of fertilisation and reproduction The fertilised egg, or *zygote*, of any sexually reproducing organism is formed by the union of one sperm (male reproductive cell) with one egg (female reproductive cell) in the animal kingdom, or by the union of one pollen grain (male) with one ovule (female) in the greater part of the plant kingdom The sperm or the ovum (egg), the pollen or the ovule, are indiscriminately referred to as *gametes,* or reproductive cells, the zygote results from the union of two gametes from opposite-sexed individuals, the fertilisation of the female gamete by the male Though the gametes differ enormously in size, the sperm being more uniformly small, the eggs varying from the size of a full stop or smaller to hens' eggs and larger, the relative contributions of each parent to the heredity of the new individual are equal This is because the sperm is little more than an isolated nucleus, what little cytoplasm remains to it being largely concentrated in the active propulsive tail, while each egg contains, besides a nucleus of the same size as the sperm's, an amount of food which differs for different species of animals; and we have seen the nucleus to be the most important part of a cell When the zygote is formed from the egg and the sperm it is the nuclei which fuse into one As it penetrates the membrane surrounding the egg the sperm leaves its tail outside while its nucleus migrates through the cytoplasm to the egg nucleus No more than one sperm is admitted

through the membrane of the egg, and shortly after the fusion of the two nuclei, the fertilised zygote begins its development into a new organism by successive cell division and differentiation

If in respect of their nuclei the gametes resembled every other type of cell in the animal's body, this process of fusion would lead to continual doubling of the chromosome number from generation to generation As this is known not to happen, and in any case could not reasonably have happened for long without excessive overcrowding of the nucleus, there must be some method for reducing the chromosome number This is accomplished by a special process of cell division known as *meiosis* or *reduction division* which takes place only in the reproductive organs which form the gametes Each gamete therefore contains only half the number of chromosomes normal for the species, one representative of each pair, which member of a chromosome pair is selected for any sperm or ovum is a matter of chance Thus in any fertilised zygote, indeed in any body-cell nucleus, half the chromosomes come from one parent, half from the other, and moreover, one member of each chromosome *pair* is from the father, the other member from the mother In the time of Mendel, whose experimental work is the foundation-stone of modern genetics, these facts were unknown, and one reason for the long neglect of his pioneer work is doubtless that there was no direct evidence for the existence of cell elements so distributed in the production of the gametes as we now know the chromosomes to be, involving such a partition of the maternal and paternal components of the cell structure In this material basis of heredity are evident two principles of great importance, the equal contributions of the parents, and the fortuitous choice of one member from each pair of chromosomes in each parent These principles will be implicit in much of the following discussion

Beginnings of Modern Genetics

Mendel's experimental methods differed from those of his innumerable predecessors in the field of plant hybridisation in three important particulars He studied the inheritance of clear-cut differences one at a time, he carefully organised his experiments to prevent insect or wind pollination by placing small bags over the flowers, and he kept careful records of the crosses made and the numbers of plants obtained of the different classes The rise of commercial horticulture, both decorative and utilitarian, in the Low Countries during the seventeenth century and its spread across Western Europe culminating in the French development of sugar-beet and other root crops by the seed firm of de Vilmorin in Napoleonic times, and the English cult of domestic fruit growing, had furnished an incentive to seek for a scientific theory of plant breeding. During the first half of the nineteenth century various

academies of science, following the custom of the day, offered large prizes for the discovery of the principles of heredity whereby plants might be produced possessing the desired properties of flower-colour, shape, or nutritive content The phenomena of "sports" and atavism were comparatively well known, but no satisfactory theory was forthcoming to explain these facts and to predict accurately the outcome of breeding crosses Up to the end of the nineteenth century the general trend of theory was to view biparental inheritance as a process of blending such that the offspring should possess characteristics intermediate between those of the parents a theory which notably failed to explain the occurrence of sports and atavism Meanwhile, the day-to-day work of plant husbandry from the time of Thomas Andrew Knight (*c* 1790), the founder of the Royal Horticultural Society, directed attention to the splitting of hybrids and prompted the search for some means of propagating by seed strains with a stable combination of hybrid characteristics

Mendel succeeded in extracting a simple "law" which had eluded so many other investigators because he recognised the intrinsic variability of biological material By growing to maturity a large number of seeds from each cross and counting the numbers of each type of offspring produced he sought and obtained simple numerical ratios In this he was not alone among those of his contemporaries who attacked the practical task of fixing the hybrid combination in the seed, but the next step of framing a theory to account for his experimental results was a brilliant mental *tour-de-force*, the product perhaps of the integrative power of Thomist logic on the science and mathematics, which he taught at the school, and the simple monastic life not so dissimilar from that of his peasant forbears

Good judgment combined with good fortune both in his choice of the edible pea as his experimental plant and in the characters he selected for consideration The garden pea, which had then been commercially available in pure-bred lines for nearly a century, is equally suitable for self-fertilisation and for cross-fertilisation, and possesses several easily distinguishable characters which are inherited discontinuously One of these characters chosen by Mendel was height Some pea plants grown under normal conditions attain a height of about 6 feet, while others do not exceed 2 feet. Though there is, of course, individual variation in height, every member of the tall variety very noticeably exceeds even the tallest of the dwarf variety in height. Also, both varieties exist in pure-breeding strains, such that every seed germinating attains to the same order of height (tall or short) as that of its parental type, and likewise for some generations back Now on crossing these two varieties and considering only the difference in height, as did Mendel, we find, contrary to the predictions of the theory

of blending inheritance, that the offspring are all tall plants, of the same height as the tall parent The result is the same whether the pollen of the tall variety be used to fertilise the ovules of the short, or *vice versa* If these cross-bred plants are allowed to fertilise themselves and adult plants are raised from their seeds, we find, again considering only their stature, that the majority are tall plants but that some dwarf plants reappear after this lapse of one generation In a series of trials of this particular cross, Mendel himself obtained 787 tall plants and 277 short Using several well-marked differentiating characters from pure-breeding strains, and crossing them in the same manner as before, he found the first hybrid generation all resembled one parent while the second generation gave back a smaller but definite proportion of the other parental type, this proportion approximating closely to one-quarter. The reappearance in the second hybrid generation of the grandparental types in the ratio of three to one gave Mendel the essential clue he needed to construct a satisfactory theory of particular inheritance.

Further experiments showed the dwarf plants of the second generation to be a pure-breeding strain if self-fertilised, indistinguishable from their dwarf grandparents, and approximately one-third of the tall plants of this generation were also pure-breeding talls, the remainder of the tall plants, self-fertilised, repeated the performance of their own parents in producing tall and short in the 3 1 ratio The theory Mendel adduced to account for these results was based on the assumption that every plant possessed two factors determining height Either one, but only one, of these factors might appear in the gametes of the plant These factors could be of two kinds, one for tallness and the other for shortness To account for the disappearance in the first hybrid and subsequent reappearance of the property of shortness, he assumed the tallness factor to dominate the factor for shortness if they should appear together in a plant Thus if we denote, in accordance with established custom, the factor for tallness by a capital (T) and the corresponding factor for shortness by a small letter (t), the original pure-breeding varieties would be of constitution (TT) and (tt) respectively Each gamete from the one variety would contain one factor (T), each from the other variety one factor (t), which combine in the seed to produce a plant of constitution (Tt), a tall plant by reason of the postulated dominance relationship between the factors. The pollen produced by hybrids of this constitution would be of two kinds, one bearing the single factor (T) for tallness and the other the single factor (t) for dwarfness The ovules likewise would be of two kinds, so that self-fertilisation could occur in four possible ways, which we may represent for brevity by the symbols (TT), (Tt), (tT), (tt), where in each case the first letter refers to the factor borne by the pollen,

the second to that borne by the ovule It is evident that the four types of seed will be of equal frequency of occurrence, so that the 3 1 ratio arises from the fact that the first three types of seed will all give rise to tall plants because of the dominance of the tallness factor, while the fourth will produce dwarf plants The second and third seed-types symbolised above have identical constitutions and in fact will be indistinguishable, while the first and fourth types will each be pure-breeding tall and short plants respectively, exactly similar to their grandparents

The zygotes designated (TT) and (tt) above are each called *homozygotes* with respect to the factor for height determination, the first being known as the *homozygous dominant,* possessing two dominant factors, the second as the *homozygous recessive* type, with two recessive factors, the third possible type, containing one dominant and one recessive factor, is the *heterozygote* Thus we have what has now been called Mendel's First Law, that of *Segregation,* emphasising that no blending has occurred of the distinctive grandparental characteristics in the first hybrid generation, as is evidenced by the recovery of those characteristics in the second generation Though they are combined in the first hybrid, they remain distinct and separate out, unaffected by their temporary sojourn together, in the gametes of the hybrid

Having demonstrated the phenomenon of segregation of the factors for several characters of the pea considered separately, Mendel next essayed crosses involving two characteristics simultaneously The dihybrids, the first generation of the cross, exhibiting both characters in the dominant form yet being in fact heterozygous for both the factors responsible for these characters, when self-fertilised gave the 3 1 ratio for each character independently Thus there were four varieties among the offspring of the self-fertilised dihybrids plants exhibiting both characters in the dominant form, dominant for the first character and recessive for the second, recessive for the first and dominant for the second, and recessive for both characters, these four varieties appeared respectively in the ratio 9 3 3 1 From this result follows the Second Law, of *Independent Assortment* factors responsible for different characters do not interfere with each other when crossed, but segregate independently.

The romantic early history of genetics, wherein Mendel's researches, published in 1866 in the *Proceedings* of the Natural History Society of Brunn (Bohemia), were simultaneously and independently discovered in 1900 by the botanists de Vries in Holland, Correns in Germany, and von Tschermak in Austria, is now a familiar chapter in the history of science The great improvements of the microscope and consequent rapid development of cytology in the latter part of the nineteenth century led Sutton in America and Boveri in Germany to point out in 1902 an analogy

we shall not find difficult to follow and one which began a fruitful and necessary partnership between genetics and cytology The analogy, which was later shown to be factual, was of course between the requirements of Mendel's theory and the behaviour of the chromosomes both in mitosis and in meiosis Mendel's hypothetical unit factors now have a material existence in the genes strung together to form the chromosomes in the nucleus of every cell The number of genes on a chromosome is not known with any pretension to accuracy, and since they are linearly arranged, will vary with the size of the chromosome some studies on the chromosomes of the little fruit-fly *Drosophila* would make it very tentatively in the region of one thousand or so on an "average" chromosome This leads us to consider the fate of Mendel's Second Law if the two gene *loci* in question lie both on the same chromosome, for it would appear impossible for them then to segregate independently In his own experiments Mendel was fortunate in three respects that the characters he chose to study were the simple effects of single genes, not affected by any interactions, that they all showed complete dominance—an intermediate heterozygote, while possibly aiding in the identification or genotype from phenotype, might also have provided superficial evidence for the blending hypothesis, and that he did not encounter the phenomenon of linkage Bateson and Punnett in 1906 were the first to discover, in the sweet pea, apparent aberrations of the Second Law The linkage between the two characters concerned was not complete, so that their common presence on the same chromosome did not appear at first as the obvious explanation, until correlated with cytological evidence of "crossing-over"—that the two members of a chromosome pair usually exchanged material during meiosis T H Morgan, working on *Drosophila* in the U S A, first put forward this explanation and soon provided many further examples from his own work The number of linkage-groups of genes any two of which fail to segregate independently in a dihybrid cross always turns out to be the same as the number of chromosome pairs

We have regarded as implicit an important assumption which has been demonstrated repeatedly for almost every plant and animal investigated, including man, that the basic tenets of Mendelian theory are of general applicability with minor modifications almost throughout the animal and plant kingdoms, an assumption which has significant repercussions on evolutionary theory Moreover, it has now been possible to show that many of the differences which distinguish strains, varieties, and individuals depend on the interaction of many genes, and in this way a formidable array of apparent exceptions which long delayed the appreciation of the generality of Mendel's conception, embodied in what is now called the theory of the gene, no longer militates against its credentials. In

fact, confidence in the theory of the gene has grown as it becomes increasingly apparent that such comparatively simple types of inheritance as those elucidated by the pioneer geneticists are exceptional rather than representative A simple modification of early Mendelism, already alluded to, is that of the intermediate heterozygote, where dominance is incomplete and the hybrid between two pure lines (homozygotes) may be to any degree intermediate in character between the parental forms one of the earliest examples found was that of coat-colour in the Andalusian fowl where the two homozygotes are respectively black and white, and the heterozygote is slate-blue in colour Here, as in many other cases, there is no suggestion of dominance of one allelomorph over the other (*allelomorphs* are the members of a gene-pair or factor-pair), but more than a hint of an effect which is quantitative rather than qualitative Another modification from the simplest interpretation is that the same gene may affect a number of different characteristics an example of *pleiotropy*, or the manifold effect of a single gene, may be cited from the flour-moth *Ephestia*, where one factor affects the colour of the larval skin, the testes, brain, and eyes of the adult, besides its viability, and temperature reaction It is increasingly evident that pleiotropy is the rule rather than the exception, especially when physiological and embryological effects, less obvious than the more gross morphological differences, are taken into account The converse is also true—that many genes exert their specific influence on the same end-result, which is again more evident when we consider the dynamics of development We are thus led equally by genetics and by physiology to a holistic view of the organism where the results of the interaction of its parts may be of even greater import than their separate actions.

The concepts of interaction and pleiotropy may be more readily appreciated by considering the modes of action of genes We may take a simple example from mice, where a form of recessive dwarfism is associated with sterility The gene causes a deficiency of the anterior lobe of the pituitary gland, of which one hormone normally regulates bone growth, and another regulates the functioning of the gonads, or reproductive organs Carrying the analysis a stage further, the presence of two recessive allelomorphs may exert an active effect in suppressing an essential stage in the normal development of the anterior lobe, or it may be that the absence of the dominant allelomorph involves the omission of a stage in development for which it was directly responsible Genes may be active at different stages of the development of any organ or structure, and the most likely hypothesis is that they exert their controlling influence through the formation of enzymes essential for particular reactions The enzymes may act directly or may facilitate the formation of chemical substances which direct development and differentiation in a certain way, some such substances are

already known as the organisers and evocators directing the earliest development of the embryo In consequence, the earlier a gene alters the normal course of development, the more widespread will its effects be, and the later, the more specialised and circumscribed. The development of a complex and highly specialised structure such as the eye is the effect of the action, and interaction, of many genes and gene-products at all stages of development, so that we find many different types of defect associated with it Many alterations of development will, either immediately or at a later stage, be incompatible with life, and such genes as may be responsible are termed lethal. In man the gene which, when present in the heterozygous condition, causes major brachydactyly (short fingers, due to the absence of one of the joints of the fingers) is lethal in the homozygous condition, many other instances of lethal genes may be found in both animals and plants, in some of which the reason for failure to develop normally—or at least the stage at which development ceases—is known

A group of genes may act cumulatively on such a character, for example, as general size, where small effects of many genes, usually acting in different ways on the component parts of what is in any case a composite character, may give the semblance of continuity such effects are usually described as *multifactorial.* A range of apparently continuous variation in a character, however, may also be due to variations in the environment, gross or minute, and it is very difficult to distinguish between the two causes except under carefully controlled experimental conditions The failure to recognise this distinction set a school of inquiry headed by Francis Galton on a false trail which resulted in a protracted opposition of the statistical to the Mendelian approach to heredity. In studying the distribution of height in man, Galton found that the average height of the sons of tall fathers (taller than the average) was less than that of their fathers, and that the average height of the sons of short fathers was greater than that of their fathers The sons' mean height was intermediate between that of their own fathers and the mean height of all the fathers in his sample, a fact he expressed by saying that the sons' heights regressed towards the mean height By consideration of the extreme cases where either (i) the sons' average height would be the same as their fathers' height—i e. tall fathers would have tall sons, and short fathers short sons—and heredity would be the main determining factor, or (ii) the sons' average height would be equal to the average height of all fathers, taken together, and heredity would have no effect on height, Galton assessed the "intensity of parental inheritance" to be about one-half The law of heredity which Galton enunciated on the basis of these and other results was his Law of Ancestral Heredity, which Yule states in the form "the mean character of the offspring can be calculated with

the more exactness, the more extensive our knowledge of the corresponding characters of the ancestry", and which numerically expressed by Galton is that "the two parents between them contribute on the average one-half of each inherited faculty, each of them contributing one-quarter The four grandparents contribute between them one-quarter, or each of them one-sixteenth, and so on." This he regarded as a physiological description of heredity (before Mendelism was rediscovered), though his disciple Karl Pearson tended to regard it more as a statistical description of long-run frequencies

Before geneticists had undertaken researches to elucidate differences which depend on the interaction of many genes, statistical observations by a Danish botanist had disclosed the true meaning of the phenomenon Galton had described as regression In experiments with beans, Johannsen found an approximately "normal distribution" for the weights of a mixed population On breeding by self-fertilisation from beans of different (extreme) weights he still obtained a normal distribution where the mean weight, after several generations, was equal to the weight of the parent, and did not exhibit the phenomenon of regression towards the original population mean Here the environmental variation (due, for instance, to position in pod, differential nutrition, etc.) was the cause of the variability in weight, for whether he bred from the lightest or heaviest bean from such a self-fertilised plant, the mean weight was still the same as the parents'. On the basis of multifactor inheritance, each factor contributing a proportional amount to the "continuous" character in question, the result is comprehensible, for if the number of contributory factors is comparatively small, as in the case of the beans, a few generations of self-fertilisation will provide pure homozygous lines and the *mean* height will then be constant Galton's interpretation, however, is based on unjustifiable assumptions, for it is impossible to dissociate, by a correlation technique of that nature, biological (here, genetic or physiological) causation from non-biological, if indeed it is possible to deduce any casual relationship from what merely measures *association*. The numerical value of the correlation coefficient has doubtful meaning in terms other than ordinal, and is in any event subject to variation in such instances by the range of environmental (besides genetic) variability included in the conditions of the investigation. For example, it is probable that selection for height, combined with close inbreeding, as practised by Johannsen on beans, would result in genetically pure (homozygous) stocks of man where the variation in height would be entirely due to environmental causes, the correlation coefficient measured successively during the course of such an experiment would vary according to the amount of variation attributable to heredity—though its value would not necessarily be any indication of the relative pro-

portionate effect The causes of variation in height in man are manifold, and are more reasonably explicable in terms of multifactorial inheritance combined with extensive environmental variation, the latter emphasised, for instance, by many surveys undertaken to assess the value of better nutrition on height. Nevertheless, the same errors in the interpretation of statistical results are frequently made to-day, which is our main reason for stressing the point in this context, we shall return to it when considering the inheritance of intelligence

Heredity and Environment

The ancient antithesis between heredity and environment as constituent causes of physical or mental characters was illuminated from a fresh aspect by Galton in the latter part of the nineteenth century He developed and greatly extended Quetelet's statistical methods, introducing and applying in particular the correlation coefficient in the belief that it could prove sufficient to assess numerically the relative importance of the contributions of nature and nurture in the causation of human differences. We have already mentioned the early confusion of association and causation, the fact that the extreme values of zero and unit correlation correspond in most cases to independence and identification respectively has led to interpretations of intermediate values of the coefficient in terms of "explanation", or proportionate causation What meaning we attach to the numerical value of the correlation coefficient depends upon the formulation and legitimate assumptions of the particular problem and in general is meaningless without them, unless regarded as an index not of degree, but of existence, of association Galton himself was led by his studies on *Hereditary Genius,* concentrating mainly on behaviour and other mental characteristics, to believe that heredity played the dominant role, environment the subsidiary one possibly of emphasising but seldom of concealing innate ability The use of statistical methods, novel and unknown to the great majority even of scientists, led to a new authoritarianism, linked to science, wherein took refuge many of the conservative ideas of aristocratic class superiority based on "breeding" and tradition It was dangerously easy to equate the existing social hierarchy, in an atmosphere of evolutionary discussion, with the hierarchies of the animal kingdom—in some quarters there was even a disposition to identify the Negro with the "missing link" as being "nearer to the apes" than the white man!—and thus to provide a new "scientific" basis for the permanence and perpetuation of the social classes in competition with the latent instability of their lower elements Pearson enthusiastically extended the investigations of Galton into the sphere of physical characteristics and correlated also mental and physical qualities with such environmental factors as housing, alcoholism,

cleanliness, and "moral state", to demonstrate their insignificance relative to the hereditary effect measured by parental and fraternal correlations

Such contentions did not pass unopposed at the time by those to whom they might have appeared most comforting, and the often bitter controversies were the cause of much wasted and useless investigation, and of virtual stagnation in what might otherwise have been a fast-flowing stream of profitable research An illustration may serve further to clarify the issue. Though Koch had discovered the tubercle bacillus in 1882, proving the infective nature of the disease, the earlier notions of the "tubercular diathesis" and "*habitus phthisicus*" still had many adherents Pearson, Pope, and Goring, in a series of papers on tuberculosis, obtained parental and fraternal correlations of an order similar to those for a number of other characteristics, mostly physical, which they had investigated and attributed mainly to heredity. They therefore threw the weight of their influence in favour of an interpretation of the prevalence of tuberculosis almost exclusively in terms of an inherited disposition, regardless of the fact that there are many agencies common to close relatives other than similarities of genetic constitution Such are home conditions, habits, and exposure to infection, all such common agencies—hereditary and environmental—will contribute to some extent to the degree of association and hence to the numerical value of the correlation coefficient Thus by its very similarity numerically with other characteristics, the tuberculosis investigation exhibited the weaknesses in the foundations Though some degree of inherited predisposition or increased susceptibility to tuberculosis seems probable in the light of modern twin studies, the comparative morbidity experience of relatives offers no conclusive evidence for such a view

In general the antithesis between nature and nurture is meaningless since both are necessary for the production of any character, in particular cases we may be able to fix upon a particular operative factor in an environment which is otherwise apparently neutral in its effect upon a condition We may cite in this connection a well-known example. In rabbits the presence of a certain dominant gene is necessary for the production of an enzyme which will oxidise the pigment xanthophyll in green food, animals bearing only the recessive allelomorphs lack this enzyme, so that the fat they deposit is yellow in colour, and though not deleterious for human consumption, renders the rabbits unsaleable for food If recessive animals are not fed any green food they do not encounter xanthophyll and thus lay down only white fat In an environment where there was no green food available, therefore, the genetic difference could not manifest itself and animals of either hereditary constitution would be indistinguishable

We find in human genetics instances of a similar collaboration

of heredity and environment Rickets is a childhood disease now well known to be due to a deficiency of vitamin D which may result from an insufficiency of sunshine whose ultra-violet rays can cause synthesis of the vitamin in the skin Susceptibility to the disease, in some cases at least, is also governed by a genetic factor, so that in a suitable environment lacking both in the vitamin and in sunshine, the condition would appear to be determined mainly by heredity Control of the environment, however, as in the example of yellow fat in rabbits, can entirely negate the expression of a deleterious gene We may cite another example from man of a condition which may be due either to heredity or to environment The rare disease *diabetes insipidus* (not to be confused with the commoner *diabetes mellitus*) is due to a dominant gene which exerts this effect through a modification of the posterior lobe of the pituitary gland, exactly the same effect may be produced, in the absence of the dominant gene, by a lesion or injury of the posterior lobe caused by syphilitic meningitis, for instance

The genes, then, appear not as character-bearers but as *potentialities* for guiding development in suitable environments—as alternative plans for a house, depending on the materials available for its construction some aspects of a plan may be unrealisable because of a deficiency of a certain type of building material The materials for the foundations are obtained from the maternal blood supply in man and other mammals, so that we must also consider the intra-uterine conditions of antenatal life as an important component of the environment The individual's own internal environment of blood and secretions forms a further component, and the interactions between genes, constituting the genetic environment *genotype* of the individual, yet another The environment, however, acts cumulatively as a complex, not as a set of isolates in time or in space, though it is convenient to analyse it into temporal and spatial components Also, we have to remember that we cannot study human communities in a highly standardised environment such as that of the laboratory of the expert stockbreeder or seedsman Moreover, the complexity of the problem of human genetics does not end here, for scientific breeding presupposes the use of highly selected and usually inbred stocks whose genetic constitution is comparatively homogeneous and which enable us to recognise the characteristic effects of individual genes in an otherwise uniform genetic complex.

We have already encountered the notion of different stages of development at which certain genes become active or exert their most powerful influence, correspondingly there are certain stages in development at which different aspects of the environment exert their most important action. The determination of the stages of development most concerned in the production of particular end-

results, characters, or phenotypes, is likely to be the most fruitful approach to the control of the phenotype by control of the environment.

In view of this insight into the production of characters as a co-operative effort between nature and nurture it is irrelevant to inquire whether heredity or environment is the more important contributor without specifying further the range, time of action, and other details of the possible variation Some phenotypic characters, however, are expressed within a wide range of different environments and thus may be described as almost entirely (within the range specified) hereditarily determined examples in man are the blood-groups and types, and taste-sensitivity to phenyl-thiourea, others may appear to be independent (within a wide range) of hereditary constitution and to depend upon the environmental conditions we may cite various infectious diseases, where if the dosage of infection be sufficiently high it will overcome almost any degree of inherited immunity. We are rarely concerned with such extreme or obvious examples, but nevertheless it may be appropriate to consider the relative effects of nature and nurture upon a certain character in a given environmental or genetic context, though extrapolation beyond the context may not be justifiable

Another controversy of ancient lineage which sharply divided the nineteenth century in particular but which that same century, or the early twentieth century, resolved largely through the discoveries of Mendel and Weismann, we should not have mentioned but for its resurrection mainly on philosophical grounds recently It is usually connected with the name of the French systematist of the late eighteenth century, Lamarck, who was one of the first to consider in very simplified form as a "ladder of nature" a theory of evolution based on the inheritance of acquired characters A belief in this type of inheritance was implicit in Darwin's *Origin of Species*, and he later developed a theory ("pangenesis") to account for its mechanism On this theory, evolution took place by the action of natural selection in perpetuating those characteristics which an animal (or plant) acquired during its lifetime to fit itself better to its environment thus the giraffe's long legs and neck were supposed to be due to the selection of those animals who by straining in their own lifetime to reach the leaves from successively higher branches of trees actually increased by small amounts the length of their legs and necks, and passed on these increments to their offspring

In sharp contrast Weismann, co-ordinating and systematising the advances in reproductive physiology of the nineteenth century, formulated his theory of the continuity of the germ-plasm, in which the germ-plasm—the reproductive organs and their products —was regarded as distinct in character from the rest of the body. The germ-cells, containing germ-plasm, of the two parents unite

to form a new individual, the germ-plasm determining the development of the new individual into functionally specialised body-plasm, of which some remains unaltered as germ-plasm to form the germ-cells for the next generation. Thus germ-plasm arises from pre-existing germ-plasm and not from body-plasm, so that acquired characteristics which affect the body-plasm cannot affect or alter the germ-plasm Weismann worked out his theory to minute details, and anticipated much of the mechanics of Mendelian genetics by predicting meiosis (reduction division) and by regarding the nucleus and in particular the chromosomes as the bearers of the germ-plasm. The theory provided the individual variation necessary for the operation of natural selection in the continual recombinations of germ-plasms from different parents, this source, however, is insufficient in itself, and mutation, the spontaneous but very infrequent (about once in a million life-cycles) changing of a gene from the normal usually dominant allelomorphic form to the recessive, has been added to it. Weismann's theory, though conceptual, philosophical, and apparently idealistic, was linked at many points to experimental reality, and stimulated much further experimentation by its clarification of former speculation and by its prophecies and predictions The idea of the immutability of the germ-plasm, however, led those who accepted the theory to place excessive emphasis on the overriding influence of heredity, and to relegate to the environment only the production of minor modifications In the early years of this century the infant science of genetics had frequently to struggle against the opposition of a body of conservative biological (and other) opinion, and in the process perhaps overstressed certain aspects of Weismann's theory as of general application The sharp distinction between body-plasm and germ-plasm is evidently not effective in plants, for instance, which will reproduce vegetatively from tissue which was not previously specialised as reproductive It is because of the inapplicability and failings of Weismannism in the sphere of plant reproduction, and in particular in the little-understood field of graft-hybrids, that the Russian botanist and agriculturalist Lysenko has chosen to reject the whole edifice of Mendelian genetics, denying even the well-attested 3 1 ratio of Mendel. His rejection is coupled on the philosophical plane with the incompatibility of Weismannism, including its later developments into Mendelism-Morganism, with the requirements of the Marxist-Leninist philosophy of dialectical materialism which demands that heredity should be susceptible of environmental alteration, that acquired characters of organisms should be transmitted, so that man may the more easily direct the development of an organism to his own use. Whether Lysenko be right or wrong in his interpretations, which savour more of the ancient Greek speculative philosophy of science unrelated to or in

defiance of experiment than of post-mediaeval pragmatic theories, is irrelevant to the fact that he is largely responsible for the elimination of all opposition to the Lysenko-Michurin view of biology and heredity in Soviet Russia

Adaptation

A more serviceable asset which effectively circumvents the inheritance of acquired characters exists in the miscellaneous group of biological phenomena collectively termed *adaptation* It is best regarded as a latent plasticity whereby, within varying limits dependent on the species of organism and the property concerned, an organism or a part thereof is enabled to suit itself best to its environment Without a general adaptability an organism becomes too highly specialised to a particular environment and incapable of change if the environment changes, too great a degree of specialisation, in fact, is tantamount to eventual extinction in the course of evolution, and geological strata of all ages are littered with the fossils of effete species of organisms now defunct because they were unable to adapt themselves to a changed environment Embryology abounds with examples of adaptability such as the "indifference" of regions of the developing vertebrate egg until determined by evocators, or the pattern of innervation as shown by limb-bud transplants, and so also does later development, evidenced, for instance, by the growth and formation of bone structure along stress lines Hypertrophy, the enlargement or strengthening of an organ or faculty much used, and atrophy, the degeneration or loss of an organ no longer in use, are examples of another type of adaptation The formation of habits may be regarded in this way as the relegation of oft-repeated chains of actions to a lower level than the conscious, to leave that free for the consideration of immediate and fresh problems thus each generation has to learn for itself how to ride a bicycle—the acquired ability is not inherited, nor can it in any sense be regarded as natural—but soon attains to a proficiency untrammelled by conscious attention to every detail Man himself is capable of adaptation to the conditions of life in any part of the world, though local varieties of man by reason of long residence have become adapted by natural selection more particularly to certain special features of the environment such as temperature or endemic diseases. Many other distinguishing characteristics of local varieties or "races" of man are due to long separation and isolation from one another, circumstances well known to produce genotypic and phenotypic divergences The term "race" applied to man in this context has led to much misunderstanding and misinterpretation it has frequently been equated to linguistic groups or religious groups or even nationalities in overt defiance of its biological meaning The concept of race in biology applies to distinctive varietal and

hereditable characters possessed by one group and not by others, the pure-breeding tall and dwarf varieties of pea-plants used by Mendel in his hybridisation experiments were frequently referred to as separate races, although they differed, as Mendel showed, in one genetic factor only. On these grounds we might extend the term to man, and refer to a race of strawberry blonds, for example, or any other characteristic *known to be hereditary,* though it would have very little value to do so—but to apply the term indiscriminately in respect of characters whose hereditary transmission is at best poorly understood and then implicitly to assume heredity in virtue of that designation is logically indefensible. What is far more tendentious is the tacit association with the physical characteristics used as definitive for races, of cultural, temperamental, or intellectual qualities, to a degree which is entirely unwarrantable, if not contradicted, by present evidence There is no reliable experimental evidence to associate with the blue eyes and blond hair of the "Nordic type" any desirable qualities of intellect or moral character not to be found to an equal extent amongst any other "race" of man now living, any more than the length of its horns or the quality of its coat—which were among the characteristics originally determining admission to the pedigree herd-books—is associated with the milk or meat yield of a cow.

The Concept of "Intelligence"

In so far as they are inherited, intelligence and ability in man are multifactorial in transmission, and resemble such a character as height in that they are susceptible of much environmental modification Again, the relative contributions of heredity and environment have become the topics of much heated controversy usually neglecting, as we have noted in a previous context, to specify the essential biological conditions of the experiments. The controversy has occasioned a great deal of emotive and polemical writing, nowadays often apologetic, because anachronistic, but none the less tendentious The versatile Galton may be said to have originated the investigation of intelligence and its relationship to heredity, and characteristically to have used statistical methods for its elucidation He began by selecting from a contemporary international counterpart of *Who's Who* called *Men of the Time,* 500 out of the 850 Englishmen contained in it, who were "decidedly well known to persons familiar with literary and scientific society" and classifying them as the "Eminent"; these formed about one in four thousand of the English male population over 50, and agreed closely with similar estimates based on the obituary notices in *The Times* over several years In *Hereditary Genius* he picked 415 men, from all history and all countries, whom he called the "Illustrious", the greatest of his great men,

being in proportion about one in a million of men over 50, and investigated how many of them had "Eminent" relatives of varying degrees of kinship Several investigators since Galton's time have employed the genealogy of genius method which he initiated to indicate the contribution of heiedity to great ability, using various criteria to evaluate their eminence, from attendance at English public schools, or the older universities, to inches of space allotted to them in *Who's Who* or the *Dictionary of National Biography* Contemporaneously, though tinged with bathos by comparison, other investigations into the inheritance of intelligence were proceeding by the application of intelligence tests, generally to school children It is frequently claimed that, by the gradual elimination of imperfections, these tests have now been refined to the point where they are almost unaffected by education, or at least that this is true of the "general factor" common to and extracted from a number of different tests performed on the same individual The main argument for a common factor is based on the positive correlations obtained between the results of tests designed to estimate very diverse capabilities, the factor itself being a statistical construct abstracted from the intercorrelations Nevertheless, its validity as a useful concept and measure is not thereby necessarily impaired, and various arguments have been adduced for the existence of such a factor on other grounds

Though we have been discussing intelligence we have not considered its definition, and many misunderstandings may be traced to divergent views on this issue It is claimed that the general factor alluded to above is largely hereditary, and it is this innate portion, known as "cognitive ability", which most educational psychologists agree to regard as intelligence It is openly at variance with the popular usage of the term "intelligence", which is dubbed professionally "general intellectual efficiency" but how far the psychologists' definition begs the question of heredity by selecting the "innate or inherited" part of the hypothetical common factor we shall not have space to consider here in detail The imposing structure based on the interpretation of the results of intelligence tests is now supported by the use of more refined statistical techniques using not correlation coefficients directly but analysis of variance and factor analysis (founded on correlations), methods not easily comprehensible to others than mathematicians, suggesting comparison with the earlier pre-Mendelian biometric assessment of causality by statistics. The more subtle the methods of analysis and the farther they aie removed from some easily visualised model situation, the more cautious should be the interpretations and deductions drawn from them, the more diligent should be the search foi assumptions implicit but unrealised, and for alternative judgments. Some of the implications of modern views on intelligence testing, if they are correct, involve conse-

quences of great importance, for they predict a gradual but progressive decline in the average level of national intelligence This follows from the greater fertility of the poorer social classes compared with that of the upper and professional classes, pointed out by an associate of Pearson's, David Heron, in 1906, and revealed more clearly by the censuses of 1911 and 1921; coupled with the assertions that the intelligence of the poorer classes is less than that of the more wealthy classes, and that this intelligence, or the greater and more significant part of it, is hereditarily transmitted There is general agreement, however, in view of the highly controversial character of the problem, that indirect arguments are insufficient and that the only solution is by direct experiment, over a period of some years, on large and representative samples of the school population, though some protagonists on either side are already prepared to accommodate any eventuality within the framework of the particular theory they espouse.

It is not sufficient, however, that experimentation on school populations should be merely static, confined to children the majority of whose educational experience has been comparatively homogeneous, it must also be dynamic, examining the results on intelligence of a wider range of educational methods in the experience of the individual child The comparative constancy of the intelligence quotient does not necessarily signify that it is unaffected by education, because in fact there are very few observations on the effect of subjecting children of the same I Q level to relatively drastic changes of environment presumptively more, or less, propitious to educational progress, the bulk of available data does in fact refer to groups of children in comparatively static environments Moreover, any demonstration of the constancy of the I Q. cannot allow for the effect of environmental differences during what may well be the more formative phase of life before it is possible to perform adequate psychological tests, and particularly the period of intra-uterine existence during which the individual is *de facto* excluded from psychological investigation, the relation of so many psychological disorders of the adult to early childhood emphasises this point Even making the most generous allowance for the constancy of the I Q. after a certain stage of development, we are merely asserting that whatever formative influences are responsible for individual differences in I Q have virtually irreversible effects thereafter This of itself signifies nothing about how far genetic differences predominate in the causation of such I Q differences, even within a changing environment For the effects of amputation, poliomyelitis, immunisation to measles, are likewise irreversible, though essentially non-genetic in this context. Thus to adduce the constancy of the I Q. as grounds for asserting the ascendancy of the hereditary contribution to individual I.Q. differences over the

environmental is tantamount to asserting that heredity is mainly responsible for one-armed war veterans, likewise an irreversible condition because there is no known environmental agency capable of causing the regeneration of human limbs

We are accustomed to speak, perhaps a little loosely, of "intelligence" in animals, to regard the horse and the dog, the cat and especially the chimpanzee as intelligent creatures, though usually we think of a different kind of ability from what we should expect from a human being in a similar situation We may attempt to define animal intelligence in several different ways for comparative purposes as the speed of learning a new trick, the ability "to put two and two together", the ability to cope with a new situation at its first appearance, or to synthesise various activities, already learnt, to make new and valuable combinations at need without trial—this could be regarded as mental trial and error without *overt* trial The last definition approaches nearest to what is usually regarded as human intelligence, and is seldom found in animals lower than chimpanzees, who are among man's closest living relatives The detailed behaviour of chimpanzees in devising solutions to new problems without overt trial—such as piling boxes and climbing them to reach food otherwise inaccessible—is interesting and instructive Tool-using is almost entirely confined to the primates, there is no evidence of "putting two and two together" in any animals lower than mammals, and very little outside the primates Animals of very much lower orders, however, may be taught "tricks" by different kinds of learning, usually those known as *inhibition* or *habituation* Inhibition is "learning not to do something" by punishment which may take the form of a mild electric shock, habituation is a kind of adaptation, or of getting used to a particular stimulus, which normally occasions a specific response, but after repetition the response weakens and finally disappears Experiments of this kind have shown that learning is most rapid when accomplished by a combination of reward (for doing right) and mild punishment (for doing wrong), significant results from many and various experiments are that learning ability (in higher animals) seems unspecialised within the cerebral cortex but is proportional to the amount of cortex remaining if part is removed, and that animals (of the same species) good at one type of problem are rarely as good at coping with another type of problem In the study of every variety of animal behaviour it is necessary to guard against the insidious intrusion of anthropomorphism into the argument Anthropomorphism is a general expression covering all forms of description of animal behaviour in human terms—in terms, for instance, of likes and dislikes, feelings, emotions, or purpose—and it is to be avoided because we have no right to impute purpose or emotion to dumb animals on actions alone without proof of

thought or speech, but principally because of the stultifying effect of such assumptions If, instead of claiming that some species of beetles "prefer" certain conditions of temperature and humidity by moving into them when offered a choice from a range of conditions, we carry the investigation a stage further and observe their movements in different *constant* conditions, we find that in their "preferred" environment their movements are slowest and the animals most lethargic, then we may account for their "preference" of those conditions by an argument analogous to that accounting for the agglomeration of cars in a narrow stretch of road or "bottleneck" that here their speed is reduced from that on the open main road, where they may be sparsely scattered, so that in consequence their spacing is similarly reduced If we were describing the behaviour of cars in anthropomorphic terms, we should say that they "preferred" narrow roads to wide ones because they tend to accumulate there, rushing anxiously from one narrow stretch to the next!

There is a school of human psychologists—the Behaviourists—who attempt to analyse human behaviour along mechanistic lines, though the difficulties are greatly enhanced by the complexities of the human subject Nevertheless, it is possible to predict fairly accurately certain aspects of mass or group behaviour, as responses to given stimuli, among human beings, and even to predict within obvious limits the behaviour of individuals for instance, we might ask of anyone in Piccadilly Circus the way to Leicester Square and, providing only that they knew the area, we could safely predict the same directions from all those we questioned Public-opinion polls attempt on the basis of what men *say*, to predict their behaviour, the relevance of the word italicised in the preceding phrase should be evident after the Gallup fiasco in the American presidential election of 1948 An important general conclusion which appears to result from such tests of human behaviour is that emotional are more effective than rational appeals in changing or forming opinion by propaganda methods, and that there is no very strong association between susceptibility to propaganda and intelligence (as measured by I Q) It has also been shown that those holding extreme opinions are the most confident of their rightness, a fact of which there are alternative explanations either that minority opinions require emotional support, or that certainty of opinion is a prerequisite of taking an extreme view

Herbart, the German philosopher and an early advocate of the application of scientific method to education, was among the first to stress the value of psychology and ethics (defined as the "science of social behaviour") in the assessment and development of educational methods, and since his time observation and experiment have aided in the resolution of many methodological difficulties Photographic recording of eye movements has proved the

value of silent rather than oral reading in the comprehension of a whole phrase at a glance, for instance, spelling lists and tests following Ayres' suggestions in 1915 are based on words commonly encountered rather than those exotic or capricious in their orthography, experimental analysis of the rhythm of handwriting has led to training exercises to eliminate the period of tense concentration and to develop fluent and economical hand movements Some of the older educational adages—that the memorising of Latin verse strengthens the memory, that the studies of chemistry and physics give an introduction to scientific method and increase the powers of observation and inference, that geometry enhances the reason and algebra mental accuracy—have been subjected to experimental test and found false The results of these experiments concur with results obtained from the psychological study of human (and animal) behaviour in general to reinforce the conclusion that there is little if any transfer of proficiency from one sphere of activity to another

We cannot, therefore, stress too emphatically the necessity to find out the facts experimentally first—to list the standard responses to stimuli—and then to discover how those responses alter or may be altered by changes in the environment or in genetic constitution The validity of the mechanistic hypothesis of energy exchange and conservation applied to the human body was challenged even after the work of Sanctorius but is now experimentally verified by every student of physiology, and though we need not expect, nor indeed hope, to explain the integrative functioning of the brain and central nervous system purely on mechanistic lines, we should expect there to be discoverable "laws" of their action It is possible that biology is in a position analogous to that of physics at the turn of the century which required Relativity and Quantum theory finally to dispel all traces of the forlorn hope of fitting extreme macroscopic and extreme microscopic phenomena into the same Newtonian mechanistic framework It may be that there will arise a new theory of nervous intercommunication, and of the integrative capacities of the brain and central nervous system, which will supersede and at the same time co-ordinate present sub-theories

A comprehensive theory of nervous integration will spring most probably from advances in the field of experimental physiology. The detailed localisation of motor and special sensory areas in the cerebral cortex has been known for some time, in addition to structural differentiation, both gross and fine, though little is known of its signification. The parts of the brain most highly developed in man, distinguishing him in particular from his nearest animal relatives and ancestors, are mostly in the frontal and parietal lobes which are called the "silent areas" or the association areas, silent because there appears to be no specific localisation

of function assignable within these areas The treatment known as "prefrontal leucotomy" for certain types of mental disease and disorder, consisting essentially of destruction of part of these areas, seems to act in a like manner to similar partial destruction in some animals by reducing the total learning capacity rather than specific aspects of it The study of brain action potentials and "brain waves"—minute electric oscillatory currents—by means of electroencephalography offers a more promising line of approach to brain functioning than does direct anatomical or physiological examination, though the analysis and interpretation of brain-potential records from normal persons is not yet very far advanced, it already affords an individual identification comparable to finger-prints, and abnormal records are identifiable in very early stages as characteristic of various types of incipient mental disorders

None of the aspects of intellectual activity, however, such as intelligence, insight, intuition, is readily identifiable physiologically, and although some psychologists have advanced the hypothesis that "quality of intellect depends on quantity of neural connections" it does not follow as a necessary consequence that because these may be structural they are therefore largely inherited, connections between neurones may arise environmentally The pattern and range of variation of normal development, especially in respect of such activities as neuromuscular co-ordination fundamental in determining the optimum sequence and design of educational curricula, form a fruitful but much-neglected field of physiological inquiry Some aspects of intelligence or of concomitant faculties necessary for its exhibition may not be displayed until certain stages of development have been attained critical appreciation, for instance, is usually late in developing, a fact which may be due either to the requisite acquisition and accumulation of knowledge, or to the use of higher centres of association in the brain In this context, a more useful concept than chronological age is that of developmental or physiological age—though it is itself a complex of more than one component and difficult of precise evaluation—proper consideration of which will aid in placing a child among his peers, instead of his inferiors or superiors. A further useful classification individually determined is that into visual or auditory types—those who respond more readily to visual or auditory educational methods—though there is strong presumptive evidence that the visual type predominates in view of the greater development in the primates of the visual areas of the brain, nevertheless the exploitation of visual aids to education, particularly the film for the study of all forms of motion and for the synthesis of three dimensions from two, is far from complete. Proper use of modern mechanical and technological devices can immensely increase the tempo and scope of education beyond that possible by the more primitive human faculty of speech—live or

in book form—alone. Calculating machines can ease the burden of arithmetic and experimental science, the gramophone improve and facilitate the learning of language, pronunciation and accent, and the appreciation and analysis of music, radio and television can present current events throughout the world and make easily available to all the services of the greatest exponents and investigators in particular fields of knowledge The employment of mechanical aids to education in as many forms as possible constitutes the only feasible method of rapidly raising the educational standards of the vast illiterate masses of mankind otherwise condemned to remain, for many decades yet, devoid of opportunities of general education to a higher level than leaves them a prey to every political agitator and petty demagogue Possibly only a world government with proper devolution of responsibility and power will realise the urgency of this problem and provide a sufficiently broad political banner to release the latent strength and goodwill of what are now unfortunately called the "backward peoples"

The changing emphases in education call for different capacities and lay stress on different aspects, or special factors, of intelligence, what we may now regard as the most valuable form of intelligence will not necessarily agree with the requirements or values of our descendants in a changed environment some generations hence It is the uses and values of intelligence in society which should be the subject of study rather than the hypothetical inherent element of the general factor, though the general factor should be common to most manifestations of intelligence, there may be compensatory increases in several special factors accompanying a declining general factor, or present definition and measurement of the general factor may be imperfect because of the inevitable dependence of the tests from which it is abstracted on current assessment, possibly incomplete, of the "dimensions of the mind" The "general intellectual efficiency" of popular usage considered as the product of education acting on "innate cognitive ability" is susceptible, therefore, of modification to the needs of the time, while direct genetic control of extreme intelligence if dependent, as is very likely, on recessive genes will be reinforced from the reservoir of heterozygotes in the general population National deterioration, in intelligence or any other desirable quality, is, however, a process to be guarded against and one whose causes deserve careful investigation, we have tried herein to counter the excessive emphasis placed on heredity but not to minimise the effects of nature, to caution rather than to dissuade those who would too readily accept as inevitable the gloomy prospect of national decline

A professional historian would not venture to pontificate on the assembly details of a jet turbine, and although the opinions of

film stars on the most diverse topics are eagerly sought by a section of the Press, no serious critic would attach to them much weight In terms of the factors of the mind, proficiency in the occupations we have mentioned is dependent upon different special factors, and only to the extent that we may assume a general factor to be operative in each may we lend any additional weight to judgments in another sphere As we have already indicated, a similar moral emerges from experiments on animal learning and "intelligence", but while we must avoid the Scyllan monster of anthropomorphism in the explanation and interpretation of animal behaviour we must not be drawn into the Charybdian whirlpool, awaiting extreme behaviourists, of regarding results obtained from animal experiments as of immediate application to man, a judicious combination of rewards and mild punishment may appeal to us as the best mode of inculcating into unwilling youth the principles mature experience considers most beneficial, but such methods need separate experimental substantiation in both the human and the animal domains In like manner we must be watchful of the semantic implications of transferring terminology and its associated imagery from its original sphere to another even apparently cognate; this is the *caveat* implicit in all metaphor, analogy, and simile, but not always recognised To say that uniformity provides no opportunity for selection is a truism in any sphere, including the biological and the cultural to extend to cultural diversity, which depends on acquired differences between groups or between individuals, the notion of organic evolution, based on inherited differences, is at least questionable, but to deny its applicability on *a priori* grounds is equally culpable, and becomes an illogicality when coupled with the assertion that organic evolution is accomplished by the inheritance of acquired differences, as Lysenko teaches. Such perversions inevitably arise when every branch of knowledge must conform to doctrinal pattern, must be forced, in this instance, into the strait-jacket of Marxist theory by the employment of dialectical casuistry If it is the first duty of a new science to classify, its second duty is to theorise from fact, not to distort the facts into accordance with preconceived theory There is no necessity to discard "orthodox" genetic theories in order to accept a new theory, it is much more likely that if a new theory should arise it will resemble most great co-ordinating theories—even relativity, in the form of the special theory—in being essentially simple of comprehension and in emerging as a wider generalisation, harmonising previously discordant facts, and embracing existing theories as special cases We have already indicated this process at work by displaying the incompleteness of some of the early concepts of genetics in the light of later developments, it is instructive, sometimes entertaining, and occasionally tragic, to peruse early work in any field from the vantage-point of modern theory, and

the sense of historical perspective which it supplies is conducive, moreover, to a better understanding of present work in related fields

Perhaps, then, an article such as this might yet fulfil a useful function even were the ideal conditions realised in practice For though certain parts of the information on fundamentals might have been omitted, the superstructure will always be in need of revision and examination from every aspect, and even the foundations themselves deserve periodical critical revaluation. No subject, in fact, can retain the title of a science rather than a superstition without submitting to the depredations of iconoclasts who lay bare its feet of clay The shift of emphasis with the trends of research renders continual restatement a necessity, and increasing specialisation, as we have indicated above, demands interpretation and diffusion in popular terms to counter an otherwise inevitable authoritarianism Though we may postulate conditions which appear to us at this time ideal, the conditions will in fact never be ideal, for it is attitudes of mind which are the most fundamental in importance, and it is towards the ideal attitude of mind—as far as our imperfections of knowledge and reason may determine it in a given environment—that we must continue to strive

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CHAPTER FIVE

EDUCATIONAL OPPORTUNITY AND SOCIAL MOBILITY[1]

Introduction

NEXT to nothing is exactly known about movement between the social classes in this country Direct investigations of its extent have all been on a very small scale and can be counted on the fingers of one hand The most recent was made by Professor Bowley in 1935 on the basis of material collected for the Survey of London Life and Labour The most comprehensive is probably that of Professor Ginsberg, who in 1929 reported on information derived from three sources answers to a questionnaire circulated in 1927–8 among a sample of members of all classes, records of admissions to Lincoln's Inn over the period 1886–1927, and information derived from Professor Bowley's investigation made in 1924 into the social conditions of the working-class population in five towns C T Saunders in 1931 analysed information relating to the working-class population on Merseyside collected in the course of the large-scale Liverpool University Social Survey of Merseyside Kenneth Lindsay collected information regarding the family antecedents and occupational destinies of secondary school pupils in five localities[2] Some relevant work has also since been done on the educational antecedents of prominent men (e g by the Workers' Educational Association,[3] Mr B Fijalkowski,[4] and most recently, by Dr N Hans in an article in this YEAR BOOK[5]

A new investigation on a somewhat larger scale is now being undertaken by the Nuffield Research Division of the London School of Economics, but results will not materialise for a year or two

No matter what turns out, however, to have been the extent of

[1] This article summarises parts of an introductory study, based on existing material, of the part played by the educational system of this country since 1900 in helping and hindering movement between the social classes, which is being prepared for the Nuffield Research Division of the London School of Economics in connection with its investigation into the class structure of this country

[2] *Social Progress and Educational Waste*, 1926

[3] *The Public School and the Educational System*, 1943

[4] "The Education of Prominent Men," *Pilot Papers*, Vol II, No 4, December 1947

[5] "Independent Schools and the Liberal Professions," p 219

interchange between the classes in the years between the wars, there can be no doubt at all as to the important part in it which has been played by education. The men and women subjects of the Nuffield inquiry have passed through the English educational system before 1939, and it is of some importance to get as precise an impression as possible of how the system has worked during the present century to help or hinder movement up and down the social scale. An attempt will therefore be made in this article to draw together what is known, or can be deduced, in the absence so far of a large-scale inquiry, about social mobility from 1900–39 and to assess the part played in this movement by the educational system

Opportunities for Social Mobility and the Role of Education, 1900–1939

A person's occupation is generally regarded as the best single indication of his social standing Admittedly, movement up the occupational scale does not always immediately result in a rise in the social scale—this may, indeed, only be achieved in the second generation. Nevertheless, improved occupational status is a prime factor in social ascent, and the extent of movement up the occupational hierarchy therefore offers probably the best ascertainable index of the degree of social fluidity or movement between the social classes.

The changes in the occupational structure of this country which have resulted from well-known technological and organisational changes in industry and commerce since the turn of the century have greatly affected opportunities of social mobility The marked growth in the size of the business unit, the decline of the small firm in all important sectors of industry and commerce, and the high mortality rate to which it is subject even where it survives as the typical unit, the replacement of the independent profit-making entrepreneur by the Joint Stock Company with its salaried staff—these factors have resulted in a substantial fall, especially in the 1920's, in the total of employers and independent workers combined, and a rapid increase in the numbers of salaried workers Thus, a traditional avenue of mobility—viz the accumulation of small capital and the working up of a small into an important concern—is very much less important than formerly, whilst new openings have been created in a host of new middle-class, principally black-coated, occupations.

It seems to have been generally assumed, even as late as the 1930's, that there existed considerable movement up the occupational scale in England,[1] in particular, vertical movement within an industry of men of humble origin whose ability and persistence

[1] Cf A Abbott, *Education for Industry and Commerce in England*, 1933

ent them to the top to become employers and managers This was the sort of movement which was investigated by Messrs Chapman and Marquis,[1] who discovered that a very high proportion of the directing classes in the cotton industry in 1912 had been recruited from the ranks of the wage-earners It was a haphazard and unsystematic sort of mobility however. There was no recognisable machinery of selection, and although the elementary school, which continued for long even after the 1902 Act to include children of a wide range of ability, was the main source of recruitment, the educational system (even allowing for part-time technical education in evening classes) played an insignificant part in it The success of a man turned on his luck, ability, and energy (probably in that order), and small capital, either saved or in the shape of a windfall, must have played an important part It is probable, moreover, that the extent of mobility of this kind was always exaggerated, since account was rarely taken of the very small proportion the successful formed of the mass of the wage-earners from whose ranks they had risen. In any case, the chances of moving up the social scale by accumulating small capital and "working up" a small undertaking into a large one were to decline into insignificance The ambition to "set up on one's own" is to-day quite overshadowed by aspirations to managerial posts, technical or administrative, in large impersonally owned concerns, and although a man may possibly attain some such managerial post—say, in retail commerce—with slight qualifications apart from experience and initiative, there is little doubt that, generally speaking, formal educational qualifications, or, at the very least, secondary education, have become increasingly important In industry, the importance of formal technical qualifications as distinct from "skill" has enormously increased, and even in the lower ranks it has for long been easier to do well with a good general secondary education on which can be built a more specific vocational or scientific training than with specialised skill slowly acquired under the old system of apprenticeship, even where this still prevails The importance of formal educational qualifications in industry has continuously increased over the last fifty years, and there is little doubt that educational opportunity has largely ousted the accumulation of small capital as the principal means of advancement.

It was the intention of campaigners for the new secondary system before 1902 that it should include technical as well as grammar schools, providing an educational basis and equipment for all sorts of occupations, the expression of an official policy of cultivating and utilising to the best advantage the national reserves

[1] "Recruitment of the Employing Classes," *Journal of the Royal Statistical Society*, Vol. LXXV (1911–12).

of different types of ability in the struggle for industrial supremacy. In fact, however, the result of a curious turn in the educational history of this country, mainly associated with the name of Sir Robert Morant, was to exclude technical education from the new secondary system, largely divorcing it from connection either with elementary or secondary education Technical education went its own way under its separate Board of Education Regulations, catering in Junior Technical schools for only an insignificant fraction of pupils of school age, unable to compete with the secondary (grammar type) schools for the abler children passing from the elementary schools, and recruiting for the most part at 13+ from those "left behind" after the selection for secondary education had been made at 11+ Attendance at the senior Technical Colleges remained overwhelmingly on a voluntary and part-time basis, usually in the evenings, and their success inevitably suffered from this fact

The whole emphasis of the secondary system, with its strong imprint of public and grammar school ideals of curricula and organisation, was on training for clerical and professional work, and the School Certificate Examination formed an effective barrier to the considerable public pressure exerted on the secondary schools for wider and more vocational curricula The neglect of systematic provision for technical education on any appropriate scale and a generally diffident attitude towards vocational instruction remained characteristic of English educational policy until the recent war

Thus, although the customary methods of recruitment into industry and of vertical mobility within it were becoming obsolescent, little or no contribution was made by the new educational system towards replacing them by systematic vocational training and guidance in suitable variety

However, the scope for occupational and social mobility was enormously increased as a result of the great diversification of the occupational structure in the first thirty years of the century, which gave rise to the great "new" middle classes of salaried professional workers and administrators, clerks and shop-assistants The facts are well known The numbers in these occupations more than doubled in this country over the period 1881–1931 [1] The salaried middle class as a whole has grown not only absolutely since the 1914–18 war, but also relatively as a proportion of the total occupied population,[2] and the opportunities, in particular for women, of improving social status by entering one of these salaried occupations—at least the lower of them—have increased at a phenomenal rate since 1911

[1] Bowley, *Wages and Incomes in the U K since 1860*, 1937

[2] Marley and Campion, "Changes in Salaries in Great Britain, 1924–39", in *Studies in the National Income*, ed Bowley, 1942

But post-elementary education of some sort, and preferably of the "grammar" type which before 1944 was alone termed "secondary", is in fact an indispensable condition of entry to all but the lowest of these expanded middle-class occupations

Thus we have the situation in which the possibilities of employment in industry on the technical side and in commerce, the professions and administration, are exceedingly closely correlated with educational opportunity There is practically only one way of getting out of the rut of unskilled labour, or of seizing one of the increased number of opportunities offered by the present occupational structure of a clean, secure, and therefore "respectable" job—and that is, to obtain selective secondary education, preferably of the high-prestige "grammar" type The dual effect of technical and organisational changes in industry since the turn of the century is to make "advancement in life"—occupational and social mobility—practically impossible without educational opportunity, and at the same time greatly to increase the possibilities of rising, not the whole gamut of the scale, but a few steps up to a minor position of relative security and comfort.

The implementation of the 1902 Act produced a secondary system in which technical education was at a discount, so that ability at the bottom of the social scale tended either to be frustrated or diverted into these vastly increased openings in black-coated work

The Birth and Growth of a Public Demand for Education

It is not surprising that this enhanced importance of education as a condition of occupational and social advance should have resulted in a unprecedented public demand for education, especially for secondary education, which the provision and considerable expansion of a State system of secondary schools after 1902 has never succeeded in overtaking and satisfying

In the concluding section of a justly famous chapter in the Board of Education Report for the year 1923–4—"Some Account of the Recent Development of the Secondary Schools"—this demand is referred to

> The great change underlying all the facts recorded in this chapter is the birth and growth of a demand for education, the great problem, what does this demand mean and where does it carry us? We have dealt mainly with schools on the Grant List, but the change does not affect them alone The Public schools have experienced it also Twenty years ago most of them were crying out for pupils, many were in financial difficulties Now, in spite of high fees, they are full to overflowing, and entry is not easy to secure The same is true of private schools and of the universities, especially of the women's colleges The change does not affect one class but many, the well-to-do manufacturer now gives his son a prolonged education, the artisan and the farm labourer gives his son, or will at least allow him to take, what education he can get What is the meaning of the demand? Is it

merely the desire for advancement in life, or does it rest on something deeper which the individual cannot or does not formulate? If the former, will it survive the strain of disappointment? If, again, the demand continues to be thwarted, if children cannot be got into the schools, as has happened too frequently in the difficult years since the war, from lack of accommodation or on account of high fees, what will be the effect? Will it be a determination to make a way, or will it be temporary disappointment fading into the old indifference?

So far from disappointment "fading into the old indifference", it has, as is well known, worked itself up into a passionate determination "to make a way" which has gone even to the lengths of family limitation—a policy which is at its most stringent in those sections of the community whose way of life involves the highest educational demands and consequently the greatest expenditure per child on education [1] Disappointment in an increasingly fierce competitive struggle for places in secondary schools has not frustrated but has merely enhanced this demand, which significantly enough intensifies at each level of the social scale above the lowest To those already within the ranks of the middle classes—even of the lower middle classes—the career open to talent, particularly in the professions, takes on a greater aspect of reality There is an obvious market for trained ability, occupational ambition is respectable, and social climbing sets in in earnest Education acquires more than a technical or vocational value It has a snob value as well It is no longer merely a question of obtaining some form of selective secondary education, of passing the watershed between skilled and unskilled labour, or the manual and professional occupations, but of the "tone" and social cachet associated with the different varieties which are available Occupational mobility must be translated into social mobility It is the obvious intention of parents to use education as a "social lever" Where ability does not exist, money if it can be scraped together, even at the expense of unborn children, may take its place in securing entry to the "right" kind of school and the "right" kind of university, so that the socially approved "tone" and the traits of speech and bearing and the useful connections are acquired Sir Cyril Norwood says that parents are "quite determined that their own children shall not 'pick up an accent' This is one of the plain governing facts of our social system to-day" [2] But the point for many parents is precisely that they *should* pick up an accent—the "right" one, which will ensure their acceptance in an easy relationship with those who matter in any of the desirable walks of life to which their ability and/or training will give them access

Consequently, as soon as the door of educational opportunity was

[1] Cf G Leybourne and K White, *Education and the Birth Rate*, 1940
[2] *The English Tradition of Education*, quoted by E L Clarke, *Sociological Review*, 1936, "Recruitment of the Nation's Leaders"

opened by the State even ever so little to social newcomers, we found the traditionally educated middle classes flying from the day schools into the more exclusive boarding schools [1] In time, too, we found the social newcomers themselves straining every nerve a generation later to send their children to the less-accessible, more costly schools, even among those on the Grant List, they prefer to send their children as fee-payers or to take up their free places in the Direct Grant schools, where these are to be found in the locality, as alternatives to the County Secondary schools wholly maintained by the local education authorities.

It is not difficult to understand why the demand for places in secondary schools reached such unprecedented proportions during and after the war of 1914–18 War incomes at all social levels and the atmosphere of upheaval and flux generated by events brought advancement in life within sight, if not within reach, of all, and education was the obvious means to this end Free places in existing schools were not the principal issue, though there was naturally a clamour for the "educational ladder" More places in existing schools for fee-payers and new schools with still more such places in them were what was wanted After the war, economic difficulties, and perhaps at the lower end of the social scale a relapse into "the old indifference", caused many of the few free places in secondary schools to be refused by the able poor to whom they were offered [2] But there was no dearth, in spite of increased fees, of paying pupils of skilled artisan and lower middle-class origin The pressure from these groups on the secondary schools in the 1920's was mainly responsible for converting the qualifying tests for entrance to secondary schools into competitive examinations

Thus, it is the demand for education at the lower end of the social scale which constitutes the pressure that has resulted in the tremendous expansion of the State system of secondary education since 1902, whilst the demand for education, and for education of the "right" kind, in the middle and upper reaches of the scale has resulted in the rescue from decline, and the actual growth of the independent public schools since 1900 This growth feeds on the pressure from below on middle- and upper-class parents to place their children beyond the reach of competition from the products of the State system, by equipping them with badges of superior social standing and more exclusive opportunities of access to the foremost positions in business and the professions.

The Educational System as an Agent of Social Selection

It was in this atmosphere of ardent social competition that the new State system of secondary education launched by the 1902

[1] Cf E L Clarke, *ibid*
[2] Cf K Lindsay, *Social Progress and Educational Waste*, 1926

Act had to work and develop. It forthwith became, inevitably as it now seems, one of the main agents of social selection, though it is an interesting fact that this was originally by no means the official intention [1] Ideally speaking, the educational system under these conditions should have acted as the principal channel through which ability would as it were find its own level, irrespective of social origin or geographical location In reality, as is now common knowledge, it has always been riddled with inequalities of opportunity which have in the main prevented the achievement of more than a very modest degree of social fluidity in this country, and have been a major factor in the preservation of its characteristic class system

Inequalities of opportunity as between children of different social classes and as between children living in different geographical areas overlap and are intertwined, and it is difficult to assess their separate influence on social mobility The latter have been the object of fairly successful official policy, at least at the secondary level, but the former are in the nature of things more difficult to tackle because more intimately connected with other than purely educational problems—social and economic problems of urban development, for instance

We may first deal briefly with *area inequalities*

The Departmental Committee on Scholarships and Free Places which reported in 1920 commented "The inadequate and unequal provision of secondary schools is the great defect of the present arrangements" The inadequacy of the provision of secondary school places in terms of the demand of parents has never been remedied, the examination taken by children at 11+, although theoretically a qualifying test, has practically nowhere been other than a competitive one, and even the degree of competitiveness varies from area to area and from year to year in the same area, since the accommodation available in the secondary schools, more often than not, determines arbitrarily the standards of entry The great variety in the conduct of the competitive examinations [2] also conditions the kinds of children who from area to area fill the secondary schools, and the numbers drawn from the working class In some areas all children of the appropriate age-group are compulsorily examined, whilst in others parents are left to submit their children, or head teachers to recommend suitable candidates Until, with the establishment of numbers of main-

[1] Cf H C Dent, *Secondary Education for All*, 1949, who quotes, p 44, the Board of Education Report for 1926–7 "The object of the free place requirement was not to open the door of higher education to elementary school children of exceptional promise, but rather to bring the advantages of such education within the reach of the poorer classes"

[2] Cf Report of a Consultative Committee appointed by the Executive of the National Union of Teachers, *Transfer from Primary to Secondary Schools*, 1949

tained secondary schools, the local education authorities, in an increasing number of areas, came to play a predominant role in the examination, there was rarely any proper machinery for ensuring that the most promising children, irrespective of social class, were brought under examination

There was, and is, also, great diversity in the type of test employed For many years individual secondary schools conducted their own entrance tests, and it was again as a result of the establishment of maintained schools and the control gradually acquired by local authorities over the conditions of awards to ex-elementary pupils in grant-earning schools that the arbitrary entrance test of attainments (usually in History, English, and Arithmetic) and in General Knowledge was finally superseded This took a long time, however, and the results of persistent attention paid by the Board of Education to the matter of improvement and standardisation from area to area of procedures and techniques of selection [1] did not fully materialise until after 1936 By that time the use of intelligence tests and standardised tests of English and Arithmetic with appropriate age allowances—and even area allowances in favour of children from unreorganised all-age rural schools, where these were competing with reorganised urban junior schools—was almost universal, and the use of professional Chief Examiners to assist the local Boards of Examiners in the administration of the examination was likewise very widespread

However, the unequal distribution of secondary provision from area to area, combined with the differing occupational structures of these areas, continues to make the chances of mobility very erratic and dependent on local circumstances for all but a tiny minority of secondary pupils who, after graduating at a university, compete nationally for entry to one of the professions This is well illustrated in the account given by Kenneth Lindsay of secondary school provision and the occupational destinies of secondary school children in Bradford in 1926 All places in Bradford secondary schools were free and competed for annually, with the result that 50 per cent of all secondary pupils came from the homes of shop-assistants, skilled and unskilled labourers, the numbers of unskilled labourers' children being 7 per cent higher than the average for the country as a whole However, for nearly one-quarter—21 2 per cent—of secondary pupils no immediate advantage in the shape of entry to a "superior" occupation resulted from their secondary schooling, since this is the proportion stated to "return" to industrial or manual employment on leaving school [2] Had the occupational structure of Bradford resembled

[1] Cf *ibid*, Appendix II

[2] However, no evidence is cited as to the after-careers of these ex-secondary pupils in industry It is likely that secondary education eased their further vocational training and subsequent promotion.

that of, say, London, these children would in fact have readily found their way instead into clerical and similar occupations

Class inequalities have been officially recognised, but, it is perhaps true to say, only in their grosser manifestations, and such measures as have been taken in a growing number of areas to eliminate their effects still touch only the fringe of the problem, which promises to prove more complex with each new piece of research into it.

Official policy has, understandably, concentrated on the economic disabilities of children competing from low in the social hierarchy for secondary school education, and from time to time local authorities have been urged to assist in removing the economic burden from the shoulders of parents of potential secondary school pupils Policy in this respect, however, has not been so conspicuously successful as in the case of standardising examination procedures Until 1933, able children could qualify on the entrance examination for one of a varying number of free places in a secondary school, irrespective of their parents' means, but thereafter, free places became "special" places—i e. fees were reintroduced and graded according to family means Leybourne and White have shown conclusively, however, that the real economic burden consists not in fees, but in adolescent earnings which must be forgone by parents if they accept secondary education for their children beyond the normal leaving-age, and official maintenance allowances have never been designed to offset this burden They amounted to quite small sums for books and school equipment and often did not really cover the out-of-pocket expenses of a secondary school course Moreover, they varied considerably from area to area

The Board of Education were naturally aware of the so-called "social factors" in secondary education [1] In the course of the important series of inquiries made by H M Inspectors between 1922 and 1939 into the selection of children for secondary education in different areas, reference is frequently made to observed discrepancies in examination results between schools of different socio-economic status [2] There are undoubtedly disadvantages in competing for secondary school places from schools in districts of low social composition, and the negative correlation has been many times established. In part this is of course attributable to the general process of social selection which tends to drain off the more intelligent families from these districts to more prosperous parts In part, straightforward administrative neglect is to blame, expressing itself, for instance, in large classes

[1] Cf D Caradoc Jones, *Social Factors in Secondary Education*, University of Liverpool, Special Survey of Merseyside, 1932

[2] Access to the reports of these inquiries was kindly given by the Ministry of Education

and inferior buildings, and these discrepancies have been shown to be strikingly capable of improvement under favourable economic and political conditions [1] But the exact role of the many contributory factors making for the negative correlation has never been worked out In other words, it is not known what, from the point of view of educational selection, are the most important ingredients of low socio-economic status. It is possible that they form a complex converging to affect adversely the health of pupils of low socio-economic status, which in turn affects their "output" at any given level of ability. Professor Burt has suggested a factorial analysis,[2] but some idea at least of the factors to be isolated for investigation is first necessary, and it seems that they are likely to prove very subtle It is undoubtedly important, for instance, for the encouragement of a child competing for a place in a secondary school that there shall not be too marked a social distance between teacher and pupil in the primary school This is something which can enter quite deeply into the success or failure of the teaching process, as has been convincingly argued by Professor Allison Davis [3] Moreover, whilst intelligence and other tests continue to incorporate such marked social or cultural bias as at present—in the emphasis on verbal facility, for instance, or, less obviously, in the formulation of problems and the tacit expectations regarding children's attitudes towards them which underlie almost all present tests—children from families of low socio-economic status will continue to compete at a disadvantage

But the matter does not end there Quite apart from class inequalities at the point of selection, the working-class child is further penalised by the lack of variety in the secondary education available The one-track vocational bias of existing secondary schools in favour of the black-coated occupations was mentioned above. Thus, except for those in the skilled artisan and "aristocracy of labour" groups, on the fringe of the lower middle class, who seize, if they can, places at secondary schools precisely because they lead to non-manual occupations, the offer of free secondary (grammar) education has often been rejected by a high proportion of parents of able children whose social ambitions for them are either of a different kind or not strong enough to induce the substantial economic sacrifices necessary to enable them to undergo such a course [4]

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[1] Cf *Social Background of a Plan A Study of Middlesbrough*, ed R Glass, 1948

[2] *British Journal of Educational Psychology*, June 1944

[3] Allison Davis, *Social Class Influences upon Learning*, Harvard University Inglis lectures, Chicago, 1948

[4] Kenneth Lindsay, *Education and Social Waste*, states that 40 per cent of the free places offered in central and secondary schools in Bradford in 1926 were rejected

It has almost always been assumed in the past that the removal of economic barriers to secondary education was all that was required to ensure acceptance of all free places offered In fact, it may be doubted whether refusals are not due, at least as often as to economic considerations, to lack of aspirations to "rise" via the particular avenues along which alone secondary (grammar) education leads.

If this is so, then ability has been doubly wasted On the one hand, many working-class children of ability have been deprived altogether of secondary education [1] Except in so far as they have been energetic enough and able later to attend technical schools or institutes on a part-time basis, their education has ceased at the age of 14 This, from a national point of view at least, presumably mattered less when it might reasonably be assumed that other real possibilities of upward mobility without special educational qualifications existed outside the schools, in industry and commerce themselves But, as has been discussed above, this seems to be an increasingly incorrect assumption, and a child's chances of occupational and social mobility have now for many years been determined to a very high degree indeed by his chances, more or less finally settled at the age of 11+, of selective secondary education The ability of these children thus probably never obtains adequate expression and reward, indeed, it may plausibly be argued that the position for them is worse in the twentieth than in the nineteenth century, when some at least could have hoped more easily than to-day to have "made good" on their own unaided efforts in industry or commerce

On the other hand, the great majority of those children, whether of working-class or lower-middle-class origin, who do pass through the maintained secondary schools enter clerical occupations and the minor professions (e g. non-administrative grades of the Civil Service, local government, nursing, the post office, banking, and insurance), and only an inadequate minority actually achieve a substantial social lift into the major professions [2] The relations of the maintained secondary schools with the independent "public" schools and with the universities are such as must immobilise a good deal of semi-educated ability in the minor black-coated occupations or, from the point of view of social status, in the lower middle classes.

[1] Cf the important study "Ability and Opportunity in English Education," by J L Gray and Pearl Moskinsky (*Political Arithmetic*, ed L Hogben, 1938)

[2] Cf figures issued annually by the Board of Education in its Reports Unfortunately, changes in the classification of occupations used in these tables make an exact statement of the annual occupational distribution of secondary school pupils impossible

The Amount and Direction of Occupational and Social Mobili between the Wars

The results of the limited inquiries up to 1935 show surprising little increase in the degree of occupational mobility since the b ginning of the century C T Saunders, reporting in 1931 on tl Merseyside survey material, concluded that mobility among occ pational grades, though it did not appear to have increased muc over the previous generation, was on the whole, considerable. (the other hand, Ginsberg, with reference to his study of mobili in five towns (Bolton, Northampton, Reading, Stanley, a Warrington)—based on material collected in 1924—says, " would seem that there has been an increase of mobility u wards in the present generation . ", though his material do not show mobility to be by any means considerable There ar of course, obvious reasons for regional differences of this kind the results of inquiries into occupational mobility Regions ar localities, rather than the country as a whole, are for the most pa the units within which mobility takes place, so that the regional local occupational structure tends to be the main determinant opportunity Thus, even assuming a perfect apparatus of selectio ability in an area will have greater or lesser chances of being realis in mobility along certain lines Thus, for instance, it is point out by Saunders that the predominance on Merseyside of a dive sity of unskilled occupations (unskilled labourers formed 50 p cent of the total occupied population, as against 20 per cen skilled) makes for less vertical mobility than in smaller, industrial more specialised towns where a good deal of movement can an does take place amongst the different grades of skill both manu and intellectual As Saunders puts it, " movements into and o of large groups are rarer than into or out of small ones " Neve theless, allowing for regional differences of this kind, and for th known deficiencies of the system of educational selection whic excludes a significant proportion of able children altogether fro the secondary schools, it is reasonable to expect that the expand provision of secondary education from 1902 would have made substantial impact on the class system of this country, by increa ing the supply of trained ability irrespective of social origin for th foremost positions and, by effecting the maximum promotion of a grades of ability passing through the secondary schools, eliminatir to some extent at least the sort of waste which consists in the pe formance, for want of training, of low-grade jobs by high-grac ability, or of high-grade jobs by individuals of mediocre talent

Profesor J R. Hicks states [1] " It is still the case that the suppl of persons with exceptional natural abilities is less than what

[1] *Social Framework*, 1946, p 66

needed for the more skilled and responsible occupations, so th the gaps have to be made up by people whose skill is mainly d rived from the training they have received or from mere experienc in holding positions which they have gained through the influenc possessed by their friends" However, despite the well-establishe correlation of intelligence (as measured by the tests) with occupa tional status, it seems generally agreed that there are considerabl untapped reserves of ability in classes of the population other tha the highest Professor Burt has calculated that "in round num bers, about 40 per cent, or two out of 5 among the pupils fro the elementary school who are capable [1] of a university educatio never obtain it" [2] It does not, of course, follow that all thes children either wish to or should become university students Th point is that they should not be lost to posts of responsibility eithe because they receive no secondary or further education at all, o because, being given secondary education, they are pressed into a unsuitable, exclusively academic mould, or because social prejudic causes preference in occupational selection to be given to other who possess, not superior ability, but a more highly regarded edu cational training, which, if it has intrinsic advantages over th State system, is not generally accessible

The black-coated, lower-middle-class occupations seem to hav been to a large extent recruited in the period of their expansio from working-class families of skilled and unskilled labourers, an it might therefore be supposed that the system of secondary schoo which had enabled those people to rise several steps in the occupa tional hierarchy would enable their children of ability to do like wise, swelling the ranks of the professions and high business execu tives In fact, however, as is well known, this happens to only a limited extent There has been no such striking challenge a might have been expected from the products of the maintained secondary schools to the hold of the sons of the independent public day and boarding schools on the leading positions in professional and business life

Ginsberg [3] discovered only a very slight incursion in the legal profession of sons of working-class families up to 1927, and in 1944 the Fleming Committee on "The Public Schools and the General Educational System" reported that although there were "some signs of gradual change", i e. in the dependence of the professions on the public schools, the change although perceptible was small and affected principally the Government service. In the examinations for the administrative class of the Civil Service, over the period 1925–37 there was a decrease of 13 per cent in the

[1] I e have the requisite minimum I Q , calculated by Prof Burt as 134 7
[2] "Ability and Income," *British Journal of Educational Psychology*, June 1943
[3] "Interchange Between Social Classes" (*Studies in Sociology*, 1932)

proportion of successful candidates who were previously educ at public schools Even in the later period, however, three-fi of the successful candidates still came from the public sch Mr. Bereda Fijalkowski in 1947,[1] having investigated the edu tional background of 1,000 prominent professional men in prac in 1945, also arrives at a conservative estimate of the extent which the products of "exclusive education" have been succ fully challenged by the products of the State system, and his v is confirmed again by the study reported on elsewhere in YEAR BOOK [2] by N Hans Although the predominance of the p ducts of the public schools and ancient universities has been turbed by the 1902 Education Act, the change is very slow likely to remain so for many decades if the independent sch continue to function as at present

It is not our task here to give a positive explanation of "superiority" of the public schools We are concerned rat with the negative problem of the difficulties of the poten secondary school pupils who, as a group, undoubtedly compris range of ability adequate to entitle them to a greater degree mobility than they in fact achieve A fair proportion of them explained above, for one reason or another, never attain secondary school education at all, but even those who do p through the maintained secondary schools have serious difficult moving more than a few grades up the occupational scale into black-coated occupations or, from the point of view of social sta ing, into the lower middle class

Of the two main avenues of advance—industry and the pro sions—the secondary pupil naturally, on account of the pronoun academic training he has received, tends, if he is ambitious, to l first to the professions Here, with few exceptions, almost eve thing hinges on entry to a university, and subsequently, on abi to finance specific professional training whether in the shape c post-graduate course, or a waiting period of uneconomic acti or a substantial entrance fee to a professional association until recently (when the Further Education and Training Gra to ex-service men and women will have permitted the entry to universities of able students who might never have reached th before 1939), not only was the provision of university places adequate, but obstacles, chiefly economic in character, kept a h proportion of potentially suitable students away The dem for graduates, and their official encouragement (as now) discouragement (as in the Depression of the '30's) obviou influence the desire and ability of secondary school pupils proceed to a university In addition, there is the more gen and perhaps less obvious fact that, if in any case he should wan do so, a child must, generally speaking, come of a family whic

[1] *Op cit* [2] Page 219.

already at a vantage-point in the social hierarchy from which this course seems natural and the goal within reach, unless he is an exceptional individual, his family must be at least in the highest strata of the working class, or preferably, in the lower middle class Alternatively, the horizon of social aspirations must have been generally widened by the lowering of class barriers, either temporarily at a time of crisis such as a great war, or more permanently, following radical changes in the social structure—as, for example, in post-revolutionary Russia. Elements of both these possibilities may have existed in the years following the First World War, and they may be present in English society to-day. But the horizon was narrow in the years between the wars, especially during the depression of the '30's, when the prospects of employment for ex-secondary pupils were even worse than for other school-leavers, and even the most accessible of the professions—teaching —was notoriously overcrowded.

Even under favourable economic conditions, however, the matter has always been, and still is, complicated by the difficulty that in England professional qualifications for the foremost positions generally include an important social ingredient which is not supplied by the maintained secondary school and the provincial university Education at a local secondary school and one of the "newer" universities is one way of entering a profession, but the chances are still against a successful rise to the top for someone with this educational background Professional advance beyond a certain point frequently depends, as is well known, on social qualifications—social-cum-professional acquaintances and connections, for instance—which are a function of the freemasonry of the public schools and the ancient universities

Thus, for success in the professions, there are important disadvantages associated merely with the circumstance of being confined for educational opportunity to the State system of secondary education—the converse of the advantages of entry to the independent public schools Entry from the secondary school to the ancient universities, with the differential professional and social advantages that this implies, is obviously much more difficult than from the public schools[1], indeed, the chances of entry from the secondary school to any university at all were, until recently, astonishingly low, despite the apparently increasing proportion of the total of university students recruited from ex-elementary school pupils.

It is more difficult to assess the position as far as industry and commerce are concerned.[2] Conditions vary widely both as between

[1] Cf Glass, "Opportunity and the Older University" (*Political Arithmetic*, ed L Hogben, 1938)

[2] Cf the Report, *University Education and Business*, prepared by a Committee appointed by the Cambridge University Appointments Board, 1945

and within the technical and administrative sides of "business", but there seems to be some evidence for the view that although there are still possibilities—perhaps considerable—of an ex-secondary pupil working his way up in a business firm to a position of some responsibility, he has on both the technical and administrative sides to compete to a growing extent wtih university graduates for all but lesser posts, and on the technical side in particular, must be prepared to undergo the strain of supplementing his practical training in factory or workshop with evening work on the theoretical side to a pretty advanced level Even here, therefore, the tendency seems to be far more than hitherto to depend on entry to a university or at least to a technical institution of equivalent standing, of which there are so very few in this country.

Thus, the potentially long train of occupational and social mobility from the working and lower-middle classes set in motion by the new secondary system after 1902 has been blocked, at least until 1939, for the great majority of able individuals in the region of the clerical and similar grade occupations and the minor professions An unknown quantity of ability is immobilised, therefore, semi-educated and socially handicapped, in local pockets, particularly of clerical and other black-coated labour, quite apart from that immobilised at still lower reaches of the social scale, having never passed through the secondary or even the Junior Technical schools

Summary and Conclusions

(1) Technological and organisational changes in industry, particularly since the First World War, have to a large extent closed what was earlier probably the principal avenue of occupational advancement from the bottom of the social scale—viz. the accumulation of small capital and the establishment of small businesses or industrial concerns which could be "worked up" into large ones. For a man to take advantage of opportunities which may now exist of working his way up within a large corporate concern in industry or commerce to a salaried managerial or executive position, selective secondary education of some sort is practically indispensable.

At the same time, these changes have resulted in a diversification of the occupational structure which now offers, in the black-coated occupations, many new possibilities of advancement But secondary education, preferably of the highly regarded "grammar" type, is again an indispensable condition of entry into these occupations

Even in industry on the technical side, the skill of the ex-apprentice has been largely superseded by formal technical qualifications or by a scientific training based on a good general secondary education.

Thus, education has become one of the main agents of occupational and hence of social selection, and schooling and employment are very closely correlated indeed

(2) This has been reflected in the birth and growth, especially since 1918, of an unprecedented and still unsatisfied public demand for education, particularly at the secondary level, in which can be detected, not merely a desire for necessary vocational qualifications, but also for the educational symbols of social superiority. The former desire accounts for the pressure on the State secondary schools, and the latter for that on the more exclusive "direct grant" and independent "public" schools, although in practice the two ingredients of the demand for education reinforce each other, and professional advance beyond a certain point undoubtedly hinges on social advantages derived from the prestige of particular forms of education

(3) The function of social selection was thus thrust on the educational system of this country, but it manifested serious defects and never performed this function satisfactorily. There were from the first serious inequalities of educational opportunity at the secondary level as between children of different geographical areas and of different social origin, and although area inequalities were the subject of very successful official policy which achieved a considerable measure both of objectivity and of standardisation of selection procedure over the country as a whole, class inequalities, even in their cruder economic manifestations, were never successfully tackled A substantial number of able children of low social origin therefore have never reached the secondary schools, which catered in the main for children of the middle (though not the "upper-middle") class

Of those of the able working-class children who did gain entry to the secondary schools, only a tiny minority reached the universities Yet a university or equivalent education is indispensable for most professional work and seems to be to an increasing extent necessary for a successful career in industry or commerce, into which an increasing number of graduates are apparently being recruited

Of the minority who did reach the universities, not more than a few outstanding individuals succeeded in challenging the hold of ex-public school men on senior posts in industry and the major professions, with the possible exception of the Government service

The majority of ex-secondary school pupils, whether of working-class or middle-class origin, irrespective of ability below that which is actually "outstanding", remained in the lower-middle-class ranks of the black-coated clerical and executive workers The able among them were immobilised, semi-educated, at this level, and the necessary army of clerical and minor professional workers has thus been wastefully supplied.

(4) The expansion of secondary education since 1902 and the creation of the newer universities, mostly in the present century, have therefore apparently not yet made a substantial impact on the class system of this country, although the process would in the nature of the case be slow, and fresh investigations on a larger scale than hitherto may show the effects of the new education, particularly since the recent war, to have been greater than now seems likely

If account is merely taken of the degree of actual occupational and social inability, the scanty material available indicates that not only does this vary widely geographically, but such changes in the degree of mobility as can be discerned are so far only slight. There has been a certain amount of movement from the working class into the black-coated occupations of the lower middle class, but it is not known exactly either to what extent this is compensated for by a downward movement from black-coated to manual occupations, or how far these lower-middle-class occupations have by now become self-recruiting In any case, the major professions remain largely untouched by this movement

From a wider standpoint, Professor R H. Tawney's dictum is very much to the point Speaking [1] of the division of the young English "into two nations", he says "Educational policy does much to bridge the chasm It also does much to perpetuate and deepen it" There is no doubt that, on the one hand, obstacles to equality of educational opportunity lead to great wastage of ability, on the other hand, traditions and values with an unmistakable class content have dominated the selective secondary schools in such a way as to divert, sterilise, or frustrate ability which, given its chance, fails to fit readily into the academic mould Moreover, the incubus of these traditions and their continued importance in social life is such that the successful climbers up the State ladder almost invariably aim at sending their own offspring to schools in the independent system outside it, so that the class-ridden system perpetuates itself and the chasm which divides its products is almost as far from being bridged as ever This must remain the state of affairs so long as there are in fact two educational systems in this country. The mass of literate clerks and executives required by a modern industrial community will be wastefully provided by the secondary schools. Incidentally to this process, a select minority of able individuals will push their way up the occupational hierarchy to be assimilated into superior social strata But education, under these conditions, cannot act effectively as a class solvent.

J FLOUD

[1] In his introduction to Leybourne and White, *Education and the Birth Rate*, 1940.

CHAPTER SIX

UNIVERSITIES AND THE PROBLEM OF SELECTION

IN this essay "universities" are taken to include all educational institutions of a level above that of secondary schools, and "the problem of selection" is discussed not exhaustively and in its technical aspects with respect to any one institution or country, but broadly with reference to trends common to many countries. Emphasis is upon recent, current, and prospective changes in the role of higher educational institutions in developing the human resources of whole nations and regions in the second half of the twentieth century.

The five years which have elapsed since the cessation of hostilities in World War II have witnessed unprecedented increases in enrolments in institutions of higher education in practically all countries At the Preparatory Conference of Representatives of Universities convened at Utrecht, the Netherlands, in August 1948, delegates reported increases ranging from 20 per cent. to more than 100 per cent since 1939. For example, increases ranging up to one-third occurred in Denmark, Portugal, and Hungary; one-half in Great Britain and Siam; and enrolments were more than doubled in China, Egypt, and New Zealand The increase in the U S A. was approximately 60 per cent

These gains were in part due to the return of war veterans and displaced persons whose education had been interrupted, and who were the beneficiaries of special provisions favouring their resumption of university studies in several countries, but everywhere there was testimony that the expansion of the universities was expected to be permanent, and provisions for added increases in the future were urgently recommended by eminent commissions in Great Britain (the Barlow Report) and the U S.A. (the President's Commission on Higher Education). These predictions and recommendations are supported by many observable phenomena, among which are a very widespread expansion of secondary education, and a substantial augmentation of birth-rates during the war period in many places. These indications of the probable future scope of higher education among the world's peoples afford background for further consideration of the problems of selection.

Contrasting Theories of Higher Education

An institution or system of higher education may be a "strait gate and narrow way", operated in a manner such as to restrict severely the numbers of persons who may aspire to careers in academic or professional pursuits, placing chief or sole emphasis on the maintenance of standards in accord with its own traditions. It may, in that role, seek to guarantee that only persous endowed with advantages fitting within a prescribed pattern shall receive the training which the society reserves for its prospective leaders, strive to prevent "overcrowding in the learned professions", and, intentionally or inadvertently, stiffen and perpetuate a stratification of society in which a thin top layer is in effect a "leader caste"—a co-optive "close corporation" in great part or wholly barred from access by any except a small *corps d'élite* possessed initially of superior endowment of wealth, social position, political power, or other similar advantage.

On another hand, it may assume an active function of seeking and finding special human talents among the youth of all levels and classes of society, and of opening avenues for the nurture of these capacities in cases where barriers in the form of poverty, prejudice, and lack of prescribed prior formal training must be surmounted In this role a university may be in part an agent for the facilitation of "social mobility" and a social instrument for the development of the human resources of a whole people

The foregoing aims have been sketched in over-simplified form for purposes of contrast, almost nowhere in the world to-day is the one espoused to the complete exclusion of the other The picture is not in sharp black-and-white, no university anywhere is wholly an engine for the perpetuation of special privilege, nor does any university or system measure up fully to the concept of a perfect instrument for the selection and development of appropriate special talents wherever found among a whole people in the modern world

The scene is panoramic and kaleidoscopic—confusing at first view, but exhibiting an orderly semblance when the direction of trends is discerned There are movements in progress in many places towards methods of identifying human talents—less encumbered by prejudices than formerly, less hampered by narrow and rigid formalisms, and more aptly designed to afford recognition to merit of the kinds which promise life-times of broad-gauge service to society, relatively uninhibited by the barnacles of caste feeling, or sterile pedantry, over-specialisation to the point of loss of "the common touch", and the smugness of an inbred "academic priesthood" inhabiting "ivory towers" remote from fellow-feeling with the people of the time and place.

Where are the evidences of the trend? Some of them have

been long in existence. The outstanding movement, long in progress but often proceeding slowly, is the breaking away from the dual "educational ladders" characteristic of nineteenth-century European school systems—one "ladder" beginning with the primary schools for the masses of the children of the people, terminal for most of them and in any case leading not to the secondary schools, but only to relatively brief "post-primary" schools—and the other available only to a small *élite,* beginning usually with select private primary schools or special primary schools attached to the secondary schools, leading into a long and rigorous secondary schooling which was preparatory to higher education and was the sole avenue from which university admission could be gained

The fact that these two "ladders" were mutually exclusive or virtually so meant that the educational destiny of the child was determined shortly after the beginning of his school career and at a tender age, and, indeed, often *predetermined* by the circumstances of his birth and family background. For most of the children of the people, secondary and higher education were not to be dreamed of—such advantages were only for the children of families already entrenched in the appropriate professional or official classes, or possessed of social prestige or wealth sufficient to finance the long course of secondary and higher education, extending over a dozen or more years and requiring payment of fees for tuition as well as the maintenance of the student in residence away from his parental roof

The undemocratic aspects of this system were mitigated to some extent in some places, as by the system of *bourses* or scholarships in France, awarded to limited numbers of primary school graduates who won them in rigidly competitive examinations, but the more significant movement is that towards the abolition of "dualism" by establishing the concept of a common elementary school for all children, understood to be not a terminal "blind alley" which diverts its pupils definitely from the possibility of secondary and higher education, but instead a base from which any pupil may transfer to the higher "ladder" and proceed as far as his demonstrated ability, ambition, and resources enable him to go.

This is the concept of the *einheitsschule, scuola unita, école unique,* or "common school", in which the individual's educational destiny is not predetermined or irrevocably settled at the beginning of his school career, but continues open, dependent upon his abilities and resources as discovered from year to year, thus providing a degree of "educational mobility".

There are now marked tendencies in some European countries towards extending the "common school" idea upwards to embrace the first cycle (three or four years) of secondary education, so that a common grounding acceptable as a base for advanced secondary

and higher education will be available to all pupils up to the ages of 14–15 or thereabouts The "common school" idea does not carry with it the abolition of private or special primary schools for those who prefer them and are financially able to patronise them, it does not mean a monolithic State monopoly of education, but it does envisage the disappearance of a primary school solely for the unprivileged masses of children, in which the possibility of proceeding to secondary and higher education is precluded

Diversification of Secondary Schools

Another manifestation long under way is the diversification of types of secondary schools to afford more varied opportunities than were available in the classical curriculum Thus in Germany, alongside the classical *Gymnasien* there have grown up the *Realgymnasien*, the *Realschulen*, and other types of secondary schools stressing modern languages and science in lieu of preoccupation with classical languages and theoretical mathematics In France there are *collèges modernes* parallel to the *lycées* and *collèges*, and *classes nouvelles* have been introduced in the standard secondary schools In French-speaking Canada there are *écoles secondaires modernes* alongside the classical *collèges*

In the U S A, the secondary school curriculum, once exclusively classical and preparatory, soon came to embrace options in English, modern languages, science, commercial subjects, industrial arts, agriculture, and home economics, and in many large "cosmopolitan" high schools the list of optional curricula is much longer It must be understood, of course, that the curricula offered by accredited high schools in the U S A may be legally determined by the central educational authorities in each of the forty-eight States, and that the nation-wide picture is therefore widely varied though characterised by a general similarity due in part to the activities of voluntary, non-governmental, regional accrediting associations of colleges and secondary schools, whose standards and recommendations are influential with the State authorities and local school systems within their respective regions

With some seven million pupils in some twenty-eight thousand high schools, the U S A. is in a stage where nearly 80 per cent of all young persons aged 14–17 inclusive are enrolled in high schools, and wherein that segment of secondary education is nearly universal. Some of the States, too, notably California, Texas, Washington, Kansas, Iowa, and Mississippi, have systems of local public junior colleges carrying secondary education two years further. The future development of local public junior colleges bids fair eventually to increase greatly the number of persons obtaining this stage of formal education at or near their home communities, and to relieve somewhat the tendency towards overcrowding in the first

two years of the standard four-year colleges and universities, and thereafter to augment the numbers of students who come to them already prepared for third-year work, thus enabling them to place relatively more emphasis upon senior college and postgraduate offerings.

The current broadening of the path of entrance into the universities takes place in varying degrees and in diverse forms in many places For example, in Great Britain there is some tendency to increase the number of available options in the university entrance examinations which are administered by the several examining authorities representing groups of universities. Where formerly it was necessary for the candidate to take and pass an examination in some five or six subject fields, there is now an incipient movement which would allow him to select five or six fields from among seven or eight, thus creating leeway for a somewhat wider scope and variety of pre-university education which would be necessary to qualify competent students for university admission.

Another and very different method of extending the base of university education, which involves also the broadening of the social composition of the university student population, is reported as taking place in the eastern zone of Germany, where it is said that it has been officially determined that the sons and daughters of farmers and labourers shall be brought into the universities in relatively greater numbers. Where it is not possible to find substantially greater numbers of young persons (from those economic strata) who have had standard secondary schooling, steps are taken to hasten the bringing of able persons of those classes into the universities without the necessity of their having had the long and rigorous secondary schooling of some eight years' duration It is reported that special facilities are set up in some places for a short and concentrated preparatory schooling of some one to three years for selected persons between the ages of 17 and 35, with a view to their university entrance, and that upon successful completion of this special preparatory schooling, such persons are inducted into the universities.[1]

The foregoing examples afford only a few inklings of a tendency which may have extremely significant bearings upon the future of universities in various parts of the world. From one viewpoint, the tendency is regarded as salutary, because it looks towards tying the universities more closely with entire peoples, in contrast with the older concept of the university as an institution solely or chiefly for the service of advantaged classes. In that sense the tendency would seem to be in harmony with the growth and

[1] This is the practice of all Eastern European countries. See articles on Czechoslovakia, Poland, and Soviet Union.—EDITORS.

development of the democratic principle, and likewise in consonance with the idea of the university as an agent for the direct service of all social classes and an agency directly concerned not merely with a few leading professions and official occupations, but with the industrial and social development of whole nations

There are other and conflicting viewpoints which are worthy of much respect, and which merit careful consideration whenever and wherever the tendencies just described are under scrutiny. One of these viewpoints is that of many professors, university administrators, and other persons vitally concerned with the future of universities, who warn that a too precipitate broadening of the base of university admission, whether in the sense of accepting a greater variety of preparatory schooling, or in the sense of conscious steps to bring greater numbers from the less privileged classes into the universities, will have unhappy if not ruinous consequences.

It is said in some quarters that the crowding of existing facilities for higher education with unprecedented numbers of students cannot but break down the standards of quality which university education ought to represent. Overcrowding is believed to decrease the opportunities available to the individual student, to make it impossible for him to have access to the amplitude of instructional equipment and to the scholarly leisure and urbane living conditions which contribute much to the experience of higher education Professors are over-worked and faculties are under-manned, and the condition in which highly competent professors are enabled to work in close contact with small groups of extraordinarily competent advanced students becomes difficult to maintain

Moreover, it is often said that the very presence of large numbers of students of diverse backgrounds, not all of which are in the most admirable academic tradition, is a handicap to the smaller numbers of the most able and promising students who have had the advantage of the somewhat narrowly defined standard secondary educational preparation.

Further, it is feared by some, wholly apart from the foregoing considerations, that a great increase in the output of university graduates will lead to sore economic, social, and political consequences. This fear is based on the belief that all or nearly all university graduates will continue to regard themselves as prepared only for the learned professions and for privileged posts of high leadership in the academic, professional, official, or business life of their countries, that great numbers of them will not be able to find such posts and that they will therefore become embittered, frustrated in their ambitions, and a source of social and political unrest. Overcrowding in the learned professions, it is argued, can at its worst produce an "intellectual proletariat" which may become "anti-intellectual" in outlook, and may constitute a fester-

ng segment of the body politic threatening the revolutionary overhrow of established social institutions by precipitate or violent neans.

In view of the fact that there is actually a great post-war in-'rease in university population, and in view of the fact that higher 'ducation seems destined to serve larger proportions of the various)eoples than ever before, consonant with the raising of standards)f living and the speeding of technological progress the world)ver, it is highly desirable that the conflicting viewpoints hereofore sketched should be most carefully examined

Holding the Standards High

With respect to the maintenance of high standards of university ducation, the evils of overcrowding must be granted The real uestion is whether these evils must be mitigated by restricting the olume of university education and by narrowing the gates of dmission, or whether they can and should be removed by the)rovision of sufficiently augmented facilities A permanent great ncrease in university population would not need to be a threat to iniversity standards if and when ample physical plants, instruc-ional equipment, teaching personnel, and research leadership were nade available. This is said with complete confidence because it s everywhere known that *universities have never served anywhere ear all the young persons in any country who are endowed with he native intellectual capacities and ambitions which fit them to mprove their lot and to increase their contribution to the national velfare as a result of the development of their talents through igher education*

The essential problem is that of identifying the young persons n every part of the population who possess potential talents merit-ng development through higher education, and of putting into ffect measures which will assure opportunity for the development f those talents in cases where opportunity has formerly been lenied by barriers of economic status, social class, or narrow cademic requirements. The matter is more important than would ppear from casual statement. Failure to make progress in it neans waste of human resources. This loss may have been going)n for centuries, but that fact does not diminish the urgency of)rompt formulation of remedial action.

The most serious obstacle in most countries is the situation vhich makes higher education impossible for many competent 'oung persons who do not possess the financial resources necessary o maintain themselves during a period of studentship, to travel to he institution best suited for their education, and to pay fees for uition and other related expenses There are several ways of)vercoming this obstacle, one of which is the provision of junior

colleges in centres of population where they are within daily travelling distance from the homes of many such prospective students. Another is the reduction or abolition of student fees A third, now being actively studied in Great Britain, the United States, and some other countries, is the establishment or expansion of State-supported scholarship systems, under which larger numbers of especially talented but financially handicapped secondary school graduates may be selected annually and given stipends sufficient to cover the expenses which would otherwise bar them The problems of administration involved in public scholarship systems are considerable, but by no means insuperable It is necessary to devise fair and accurate methods of selecting the candidates, and to improve these methods as rapidly as the science of test-construction and of other means of discovering promising talents afford the basis for improvement. Although much progress has already been made in these fields, it is probable that the sciences which bear upon personnel selection will continue to make great forward strides

Any of the foregoing methods of making higher education available to promising but needy young persons, if carried out on a substantial scale, involves added expenditure from public funds and the allocation of a somewhat larger portion of the social income to this way of developing human resources than has been customary in the past The sums required would not, however, need to constitute any relatively large fraction of the public budgets in the leading countries, nor would they be large in relation to the gains which could be expected to accrue from the cultivation of talents which would otherwise be undeveloped and unused

It is only recently that the standard of living in many nations, and the industrial productivity of many peoples, have attained levels such that it is economically possible for the extended period of nurture represented by higher education to be available for larger proportions of able young people Only recently have the techniques of testing general intelligence and special mental abilities been developed to a point where it is readily possible to identify young persons of promise in whole populations Only recently has the progress of the democratic principle attained a stage wherein the development of individual capacities by suitable education comes now to be recognised as one of the fundamental human rights Only recently has the science of political economy come to emphasise the primacy of human resources in building the strength and assuring the security of nations

All these factors point towards an expansion of higher education. It would seem clear that this expansion need not involve permanently any lowering of standards, but there is good reason to believe that it *can lead to an elevation of quality not only to higher levels but also on a broader base than ever before attained*,

This latter possibility depends upon several new concepts which may supersede older ideas of the role of universities. Higher education can be conceived not as a long and narrow bottleneck into which only a tiny fraction of the young people of a generation find their way, but instead as a pyramid that is the apex of a national educational system, broad at its base and open at many points to passage into workaday occupations, wherein the individuals who have had its benefits may act as a leaven in the population and working force of the country.

Diversification among Institutions and Courses

Higher education can be conceived not solely as rigorous preparation for strictly limited numbers of persons in a few learned professions, but as a prelude to an enormous variety of useful places in society—of which there are many hundreds of types in the complex modern economic world More than that, higher education may not be, and indeed never has been, regarded as solely or principally a training for occupations or professions. Its more important function is that of lifting the general level of culture—of preparing young people not merely to earn a living, whether it be in a privileged position or not, but of preparing them for life-times as well-rounded and educated individuals fitted to meet their personal problems and their social responsibilities, of whatever nature, in a more admirable manner than would otherwise have been the case

If the load of educating greatly increased numbers of students for a complex modern society had to be carried alone by universities characterised solely by the forms of organisation and the educational philosophy of the nineteenth century, without the development of new institutions, new faculties, and new "divisions of labour" within the enterprise of higher education, it would indeed probably compel a lowering of standards of quality It would be flying in the face of logic to suppose that there will ever be more than a few persons in any generation whose abilities are in the very topmost levels. It would be stupid to suppose that the nurturing of those very superior abilities should be subordinated to or crowded out of the picture by a stampede of the mediocre. But no such eventuality need take place. *Higher education can be greatly expanded without neglecting the provision of suitable institutions, suitable courses, and suitable research facilities for the few who are able to use such facilities as no others can.*

This principle is in part illustrated by the current situation in the United States, where certain of the state universities are required by law to admit every graduate of an accredited high school within the state who applies, and which also offer creditable senior college and graduate work; where others of the state universities

maintain selective entrance requirements, and where various privately controlled universities, among which are some of very high world-wide standing, maintain still higher requirements for admission so that their student bodies are largely restricted to young persons endowed with many advantages, including extraordinarily high capacities for academic work In the same country there exist some universities whose principal emphasis is upon high-level graduate and professional studies, and some post-doctoral institutions open only to a few selected mature scholars who have demonstrated that they stand at the apex of achievement in their respective fields An example of the latter is the Institute for Advanced Study at Princeton, New Jersey.

In the same country there are somewhat more than one hundred universities equipped to offer advanced work for the doctoral degree in some departments of instruction There are some four hundred institutions offering advanced work only to the level of the master's degree in some departments. And there is another group of six hundred to seven hundred institutions of the level of higher education which offer no instruction or research beyond the bachelor's degree In addition to all these there are some six hundred junior colleges offering only the first two years of the standard four-years' undergraduate course The foregoing crude sketch of a greatly varied higher educational system affords a measure of exemplification of the possibility that such a system may be made broad at the base without cutting off the top.

The picture of a higher educational system as consisting of a variety of institutions whose instruction is of different types, and whose standards of admission and of graduation vary considerably, is by no means confined to the U S.A. In varying degrees it is becoming characteristic of many other countries—and in none of them has there appeared any justification for the belief that a broad and diverse system of higher education rules out or lessens the possibility of developing advanced instruction and research at the topmost levels in that country. Instead, there is much evidence that such a system favours the building up of the highest peaks of academic and scientific achievement in appropriate institutions with appropriate facilities for work on the topmost level.

If the highest standards of creative scholarship need not suffer under the conditions projected, then what of the danger of an "intellectual proletariat"? The answer has already been implicit in the nature and aims of a higher educational system which is conceived as a pyramid and not as a bottleneck. In most English-speaking countries a majority of all those who enter universities do not plan or intend to go beyond a first degree. Indeed, many who enter colleges or junior colleges at the level corresponding with the early years of university work plan to pursue their studies not beyond the junior college. These persons will not be destined for

the learned professions or for other high posts of privilege in the economic and social order, and they will have no illusions to that effect Those for whom the vocational aim has primacy will have prepared themselves for some of many types of useful and satisfying work in " semi-professions " or " sub-professions " for which society has increasing need as its industrial and professional organisation becomes more complex

For example, for every physician or surgeon or medical specialist of high rank, there must be several persons prepared for work in related pursuits for which the educational preparation is not extremely long and rigorous but is of an intermediate character Among these may be mentioned the bedside nurse, the dental technician, the dental hygienist, the optometrist, the physiotherapist, and scores of other types of technicians whose work is essential to a good programme of public health and medical care The health professions constitute only one example out of many which illustrate the same principle For every engineer of long training and high qualifications, there will be several technicians of intermediate grade who must be well educated and well trained for their specialities, but by courses shorter and less rigorous than the full engineering course Among these are draughtsmen, construction foremen, and many others For every individual possessing the highest university training in the science of agriculture, there will be many others needed in the current development of the world's agricultural production who have been trained for their work in one or two or three years of agricultural study at the level of the early university years

If higher education is conceived thus as a pyramid from whose several strata there is a large overflow of students into the work of the world in a thousand types of occupations, the menace of overcrowding in the top professions and scientific pursuits does not appear to be grave

But the better argument to calm the fear of overcrowding in the learned professions is implicit in the fact that all higher education worthy of the name partakes of the character of *general education* If it is effective as such, it carries values which outweigh any occupational competency to which it may contribute. If it enables the individual to face more intelligently and with more confidence and poise the generalised philosophic problems of life which every individual must face, and if it gives him a better grasp on the social, economic, and political problems of his day than he otherwise would have had, those results standing alone are ample justification. Moreover, those results negate the idea that an expanded higher education will create a disgruntled intellectual proletariat constituting a threat to the organised institutions of society.

If we are really committed to the principle of democracy, then we depend for the solution of the economic and social problems of

our time, however difficult and complicated they may be, upon the wisdom of the whole population. We expect that every citizen must have his part in understanding the issues which face the nation, and take his part in contributing to their solution through democratic methods It seems simple and nearly self-evident that one who has had the advantage of study in an institution of higher education may be expected to be more able to comprehend and discharge his functions as a citizen in a democratic society than he would have been without that advantage. If higher education detracts from one's social competency and tends to make one a liability or a menace to society, then the content and organisation of higher education need to be radically changed This is pushing the argument towards a *reductio ad absurdum* Nowhere in the world is the picture so dark that higher education is actually a menace to society

In countries maintaining economic systems in which there is considerable freedom of individual enterprise, and such absence of tight regulation as leaves the economy open to the possibility of violent fluctuations in the business cycle creating the ever-present fear of economic depression, the argument that higher education should be limited to such numbers as can be sure to find employment in the learned professions when the business cycle is at a low point is peculiarly short-sighted. If we are to mitigate the hardships recurrently caused by economic depression, we shall need the intelligent understanding and concurrence of a majority of the whole people with regard to the measures necessary to accomplish that result *The answer is in the wider dissemination of general education, including higher education The fear of depression is thus plainly an argument for more education, not less* The same logic applies to any other social problem confronting mankind to-day If the universities and other institutions of university level succeed in their function of general education along with their function of educating specialists, then an augmented university population and a broadened base of higher education are in no sense to feared, but greatly to be desired. They constitute a principal lever for the raising of the world's culture and well-being

Varied and Expansible National Systems

A national system of higher education can resemble a fountain-head in the shape of a cone from which issue streams of cultivated persons at numerous levels and through a great number of channels designed to prepare them for many types of service which society needs and which the individuals have chosen for themselves. This concept carries with it the thought that an important and growing function of higher educational institutions is that of educational

and occupational guidance. This function includes testing and measuring the special capacities of students at intervals in their educational careers, and, taking into account also the current and probable future needs of society for the services of different occupational specialities, as well as the ambitions and preferences of individual students, providing them with information and advice which may aid them in reaching the most suitable final choices It involves also a degree of flexibility and latitude for change within the educational system, to the end that the ladders leading upward are fitted wherever possible with crosspaths from one to another, so that the number of "blind alleys" from which future educational progress is cut off will be at a minimum

In a varied national system including both state institutions and private autonomous institutions, wherein many institutions may continue to determine their own standards of admission as well as of achievement, there is no reason why some institutions may not adhere to their traditional patterns of high and narrow standards Indeed, some great privately endowed universities are well equipped for just that function, and well supplied with financial resources necessary to execute it Moreover, if they continue to perform this admirable function well, they will undoubtedly continue to attract additional private gifts and endowments from persons who wish to devote their wealth to that purpose This is often said to be one of the major reasons for the existence of private or free universities alongside the state universities in national systems where the growth of the latter tends to give them an increasing role in the total higher educational scene

The tolerance and encouragement of private institutions which are permitted to determine their own standards so long as they equal or surpass minimum standards established by the state is a characteristic of free pluralistic societies the world over, and is in sharp contrast to the idea of a state monopoly of a monolithic higher educational system. It fosters continued variation among institutions, encourages experimentation, and favours a degree of variety in the scene which promotes growth and upward evolution. Further, it preserves for prospective students a priceless freedom of choice to attend if they so prefer an institution of a particular type, characterised by its own distinctive traditions and academic climate.

The same principle is applicable to an almost equal extent among groups of institutions which are state-supported and state-controlled. There is a salutary tendency for them to take note of their respective places within the state or national system, and to co-operate with each other in selecting their respective specialities for highest development, to the end that the whole system shall afford comprehensive, well-balanced, and well-distributed grants available to the students of the nation, with a minimum of needless

competition and duplication, and with a minimum of gaps unfilled by the grants of any existing institution

The concept of variation among institutions does not rule out the idea of a central core of general education as an essential part of the offerings everywhere. The content and methods used in this central core cannot, however, remain invariably immutable In some places the function is thought to be best fulfilled by a study of the classical languages and of theoretical mathematics. In other places it is thought that the interests of students and the needs of modern society can be better served by a curriculum organised around personal and social problems of the day, into which are drawn and integrated the contributions which can come from the several scientific and philosophic fields of learning. After all, the difference is merely one of organisation, sequence, and method; and we do not debate at this point the relative merits of teaching the conventional fields of learning as "disciplines" in their traditional form, as against the form of organisation in which they are commingled as their bearings upon modern problems become pertinent. *The essential point is that the core of general education, without which higher education becomes merely a conglomeration of narrow specialities, can at all events be preserved and strengthened,* and contribute a principal fruit of the higher educational process.

The responsibilities of citizenship in democratic governments in the modern world point towards a broader concept of *general education* than has formerly characterised European-type universities and secondary schools in the main An example of at least an oblique recognition of this need is the recent introduction in France of the "propaedeutic year" of general studies as prerequisite to beginning degree courses in the universities and other higher schools. One of the avowed purposes of the "propaedeutic year" is to afford a period of broader exploratory and integrative study following the more rigid regimen of the *lycée* courses. Motivated in part also by alarm at *le surpeuplement des universités,* and accordingly intended in part as a screening device, the propaedeutic year may not be the most desirable method of injecting an antidote to the traditional rigidities of curricular organisation.

In Great Britain many thoughtful educators are sceptical concerning what they regard as too early and too nearly exclusive specialisation in selected fields in the secondary schools and in the first-degree courses in the universities The infusion of the elements of a broad general education fitting the student for a full-rounded role in modern societies may be said to be a prime problem of universities and secondary schools in all Europe, and, indeed, in all the world. No cut-and-dried panacea can be offered. Full recognition of the problem, and the application of the best

thought in revising and rebuilding the content and methods of secondary and higher education over a period of years, will be necessary to keep education abreast of advancing democratic societies.

The Education of Teachers for All Levels

One of the most promising possibilities (which is indeed a current world trend) of tying higher education more closely and directly and broadly with the elevation of the general culture, is that of bringing the education of all teachers at all levels into the fold of university education. In many countries for many decades the schools and courses designed for the education of teachers for pre-schools, primary schools, and elementary and intermediate schools have been regarded as a species of "post-primary" institution, entirely apart from the universities, having no connection with them, and being in a distinctly different and lower order. Thus the teachers of the masses of the children of the people never attended universities and never breathed the academic atmosphere of university life and university education The university world was a world beyond their ken and outside the scope of their hopes and ambitions Obviously this state of affairs is consonant only with a dual national educational system, in which the universities were rarefied mountain tops in no sense regarded as attainable by all competent persons within a democratic society, but only by a narrow segment of the highly privileged

That this gulf of separation between the common schools of the nation and its universities is contrary to the development of an educational system suited to a democratic society in modern times has now become manifest. If the university faculties and departments conduct research on the frontier of knowledge and discover new insights and techniques by which the education of children at all ages may be vastly improved—as indeed they can, do, and have done—it follows that persons who have chosen teaching in the lower schools as a profession should have access to those centres of advancement directly as students of their chosen profession.

Thus it is that the universities in many of the leading nations have established full-fledged faculties of education, institutes of education, and centres of educational research Thus it is that in some countries prospective teachers in pre-schools and primary schools find that the preparation for their profession involves a professional course either in a university or in an institution of university level. Over the world as a whole this movement has not proceeded very far. Its progress to a point where every teacher in any sort of school will have a university education or its equivalent yet has very far to go The accomplishment of that progress would carry with it an enormous increase in the student population at the university level, an increase not properly to be

regarded as a burden threatening the quality of university education, but rather as an opportunity for the universities and their sister institutions to make an unprecedented contribution towards raising the level of the education of the children of all peoples everywhere.

New Tasks To-day and To-morrow

In the face of the opportunities and responsibilities such as have been briefly sketched in the foregoing paragraphs, it may seem that the role of universities in our day is not that of a tenacious clinging to the narrow traditions of bygone centuries, but instead that of a bold and courageous acceptance of functions which at first glance appear to be expansible to frightening proportions But here and there in the world these partly novel responsibilities have already been undertaken by university-level institutions with a degree of success and with no perceptible loss of the fine values which have been built up in universities over hundreds of years. The movement is going forward and has been under way for nearly a century in some places, as witness the fifty-nine land-grant colleges and universities in the United States, some of which have come to occupy places of pre-eminence among the world's technological institutions and universities, as witness more than one hundred teachers' colleges in the United States now providing full four-years degree courses for prospective teachers, supplemented by suitable grants in the liberal arts and sciences, and in some instances by well-equipped departments offering advanced graduate degrees, as witness the faculties of education which have found places in the universities of Great Britain and in the universities of the British dominions, as well as in some other parts of the world

The current and future expansion of the universities and their sister institutions, here only sketched, derives from the solid foundation of faith in the improvability of man in the mass—of confidence in the progress of democracy, of which the inherent worth and dignity of human beings of whatever class is a prime tenet. This faith is the mainspring, but it is not unaccompanied by evidence of works. The scientific and technological pre-eminence of the countries which are to-day leading the world in volume and quality of industrial production must be ascribed in substantial part to the volume and quality of education by which they have been characterised in recent decades.

To-day, with half the peoples of the world illiterate, with great natural resources undeveloped, and with hunger, disease, and misery the inescapable lot of hundreds of millions of human beings, the discoveries of science and the insights of the social sciences already afford ample flashes illuminating the picture of a future

world in which these things need not be. The universities have stood at the forefront of advance toward these discoveries and insights. They now face the responsibility of continuing their leadership, and the unprecedented opportunity of serving directly larger numbers of the people of each succeeding generation.

Among the specific avenues along which significant progress may be made in solving the problem of selection are the following

(1) Continued invention and refinement of the techniques of testing aptitudes of a high order, for general academic or scientific work and for work in numerous specialised fields.

(2) Wider application of improved techniques of testing aptitudes at higher levels in the educational ladder, thus allowing for postponement beyond childhood and early adolescence the final choices determining the individual's educational and occupational destiny.

(3) Development of diversified systems of higher education embracing institutions and courses suited for (*a*) students gifted with the highest intellectual capacities and with aptitude for work on the frontiers of knowledge, (*b*) students equipped for and desirous of pursuing high-level professional studies, (*c*) students destined for a great number of " semi-professional " occupations of an intermediate level, increasingly needed in modern societies and requiring university preparation of intermediate durations, (*d*) students susceptible of gaining substantially in individual worth and social usefulness from varying periods of general education on the university level, without particular reference to a specialised occupation.

(4) Preservation and broader application of the pluralistic principle in higher educational systems in free societies, including encouragement of institutional liberty of experimentation in the educational process, and the maintenance of latitude for the existence of at least some institutions varying widely from the general norm and fostering their own distinctive tone and character and their own processes of selection

(5) Encouragement of endowed scholarships and development of state-supported scholarship systems keeping abreast of the best available methods of discovering general and specialised talents among the young secondary school graduates in entire populations

(6) Long-range studies of the prospective needs of the society for the numerous types of services which persons equipped by higher education will be available to perform, and of the probable proportions of the social income which can and should be allocated to those services, to the advantage of the whole people—such studies to take account of the principle of freedom of choice, of the political and social traditions of the people and possible evolution thereof, and of probable technological and scientific advances and new insights in the social sciences and their effects upon the resources and needs of the society.

(7) Continued studies of the capacities and limitations of individuals, involving an ongoing synthesis of the findings of the medical, bio-physical, bio-chemical, anthropological, psychological, and psychiatric sciences, as well as the philosophies bearing thereon, and the implications of the findings for the evolution of more enlightened and humane national and world cultures.

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SECTION II

THE BRITISH ISLES

Introduction

THERE are five different educational systems in the British Isles, serving the needs of the national groupings of England, Scotland, Wales, Northern Ireland, and the Irish Republic. These nations, of which the last is politically independent of the other four, accept wholeheartedly the ideals of individual freedom, representative democracy, and social equality Traces of long-continued association are obviously in evidence and the same social institutions exist everywhere

The English were long the dominant nation and, during the eighteenth and nineteenth centuries, the social hierarchy was more clearly demarcated among them and more pervasive in its influence than elsewhere in the islands. Academic scholarship and learning were not markedly useful to those who wanted to rise in the world what mattered more was membership of or acceptance by the ruling classes These used as an educational system a number of public schools, of Anglican tradition, and the Universities of Oxford and Cambridge The standing of these institutions depended on prestige and tradition, which, as elsewhere in Europe, was based upon a classical-humanist curriculum.

During the last thirty or forty years, things have changed quickly and radically. The privileged position of the ' Public Schools ' and of the older universities, as well as of the classical courses, has been challenged on all sides More and more do these institutions turn to rigorous, well-planned balanced curricula in which the sciences play an important role and they compete, very successfully, in the scholastic field with the more recent institutions which formerly served the middle classes the grammar schools and the modern universities. All this reflects the changed position of England in the world and of the upper classes in English society. As elsewhere, opportunity to rise socially and to obtain responsible and well-remunerated posts depends increasingly upon the capacity to pass examinations which are open to all. A well-articulated, very democratic, public education system helps able young people of all ranks to prepare themselves for these examinations.

One should, perhaps, add that, though social mobility is now at least as great in England as anywhere, occupational mobility seems

to be diminishing in some respects The occupational pattern has become so rigid as to make it hard for the nation to adjust itself to the cumulative effects of the Second Economic Revolution which is going on all over the world. It may be asked whether the educational system has not made the situation worse by helping to direct workers away from industries and occupations which need their services The loosening of the educational pattern, so that it might assist in the very necessary re-deployment of the industrial army, is a matter of growing urgency

The position in Scotland is very different Here respect for education grew naturally against the Calvinist background. The school was the place where all children learnt to read the Bible and where they acquired the habits of sobriety and diligence proper to laird and crofter alike During the eighteenth century, the gentry and aristocracy were never as wealthy or as powerful as in England and they did not, in fact, buttress their position by a separate educational system Opportunities of advancement were more numerous south of the Border or overseas emigration was common, and emigrants were helped by having a sound education. The total result of all these factors was the development of a system far more egalitarian than the English, which, however, stressed at the same time the academic intellectual values

In Wales, too, one finds among the people more respect for education than is habitual in England and, as in Scotland, the proportionate number of university students was long about twice as great as in England

The Irish Republic is the only predominantly Roman Catholic part of the islands and also the only one where agriculture is still the chief source of wealth There is no old native aristocracy, but a strong middle class, drawing its wealth from trade and commerce, has grown up, and increasingly it sets the social tone. Opportunities for advancement are rather fewer than elsewhere in the islands and, among large sections of the people, the desire for social rise is not highly developed Many, in fact, are protected to some degree from the impact of industrial ways of thinking by their occupations and by their Church

In spite of what has been said above, one must insist that the whole of the British Isles, as indeed the whole world, is in the throes of a deep, radical transformation which to a great extent will even up the differences.

CHAPTER ONE

ENGLAND AND WALES

THE numerous factors influencing a child's ultimate choice of a career fall into four main groups Firstly, there are the geographical and economic conditions of the country in which the child lives Secondly, there are the social conditions of the country and of the group within which the child grows up These exert both a direct and an indirect influence they operate directly upon the child and they operate indirectly by influencing the outlook of his parents and other close associates. Thirdly, there is the provision made for education, and fourthly there are the child's own abilities and aptitudes Clearly, no sharp distinction can be drawn between one group and another they are themselves interassociated and often interdependent, the financial condition of one family, for example, may be largely determined by its social standing, and the social standing of another by its financial condition. Let us consider briefly first the geographical and economic setting and the economic structure of the country.

Geographical and Economic Factors

Great Britain has several significant geographical features which have influenced its economic life First, there is its situation, which has made it a convenient centre for world trade, banking, insurance, and communications. Secondly, its rivers and estuaries have permitted the growth of large ports, such as London, Bristol, and (since the building of the Ship Canal) Manchester, located well inland, thus greatly facilitating the import and export of materials and manufactured goods. Thirdly, there are abundant natural resources, such as coal, iron, and fish. Fourthly, its temperate climate has permitted the establishment of a vast range of occupations, both agricultural and industrial, while providing sufficient diversity in different areas to meet special requirements, such as those of the cotton industry in Lancashire or of the woollen industry in Yorkshire. Lastly, one might mention the country's compactness and lack of any formidable natural barriers to the development of transport by canal, rail, or road.

Broadly speaking the country relies, not merely for its prosperity, but for its very livelihood, upon its external trade. Its over-all production of food is only about two-fifths of its con-

sumption the rest is obtained from overseas and paid for by the export of manufactured goods. Enough coal is mined to supply all the country's needs and allow a small proportion for export, but otherwise raw materials used in manufacturing goods, whether for home consumption or for export, have to be imported either in whole or in part, and paid for by exports. Home supplies account for 5½ per cent of the soft-wood used, 61 per cent. of the iron ore, 8½ per cent. of the wool, and 36 per cent. of the hides, while 12 per cent. of the rubber used is reclaimed. Some materials, such as petrol, cotton, and tobacco, are wholly imported or so nearly so as to be thus regarded for practical purposes. Before the Second World War there was a considerable income from overseas investments. These, however, were mostly disposed of in the early days of the war to pay for imports needed for the war effort, though there is still some income from banking, insurance, and brokerage effected on behalf of overseas customers

Compared with 1938 the over-all figure for exports, after due adjustment has been made for the altered purchasing power of the pound, has increased by some 36 per cent The value of exports, however, still falls short of that of imports by some £35,000,000 a month, and the position is further complicated by the greater proportional gap between imports and exports in respect of certain countries, notably the U S A and other "dollar" areas, which are the source of essential supplies. The result has been that the Government has felt itself compelled to exercise a considerable measure of control over consumption and production, so as to reduce the excess of imports over exports, to encourage production for export, especially to those areas with which an adverse balance of trade would have the most detrimental effects upon the purchase of food and raw materials. This control is exercised in various ways, of which one of the main is the allocation of raw materials. The amount of steel, for example, allocated to a motor-car manufacturer will be dependent upon his exporting a fixed proportion of his products In the allocation of material the highest priority will usually be given to those industries with the greatest possibilities of the goods being exported, especially to dollar areas Such control may clearly have far-reaching effects upon employment A manufacturer for whose goods only a limited overseas market can be found will not be able to divert the surplus to the home market instead he will be forced, by the limitation of the raw materials allocated to him, to restrict his output to a figure such that the required proportion can be disposed of overseas. It may thus become necessary to lay off workers, who will then have to seek other employment. Limitation on consumption by the public, usually in the form of rationing, also affects employment. For example, petrol for private motoring has been severely restricted, being for a time banned altogether, and it is not impossible that the ban may return. The limitation thus

imposed on the number of cars on the road and on the extent to which they are used diminishes the calls upon repair garages, filling stations, and wayside cafés, with consequent reductions in staffs.

The degree to which control may be imposed is naturally dependent upon a variety of circumstances, which will not always be obvious in advance to those who may be most adversely affected. Even when an extension of control is foreseen as probable, it is not always possible for the individual to take precautions to alleviate any hardship it may bring him. A butcher, for example, may foresee that an international dispute may result in a reduction of the meat ration, with consequent reduction of the volume of his trade and therefore of his profit, but it is difficult to see any possibility of his providing against this, except to lay off staff, if he employs any Even if he takes the extreme course of disposing of his business he is likely still to be the loser, since its value will have been adversely affected by the possibility which he—and others—will have foreseen.

The desire to own one's own small business and "be one's own boss" is widespread and deeply rooted among the British people, and the sense of self-reliance and independence which this desire manifests and which is fostered by its fulfilment is by many regarded as a valuable national asset. Present-day circumstances, however, tend to make the "small man" chary of investing his savings in such a venture. There is, firstly, the insecurity caused from conditions such as those referred to above Then there are not infrequently difficulties in obtaining suitable paid help These arise in main from the general manpower shortage but at times also from other causes, as for example, the legislation enacted to restrict the employment by newsagents of children of compulsory school age. Further, should any profits be made they are liable to high taxation. There is therefore some tendency to seek an occupation not subject to such risks and difficulties, to be employed rather than to be an employer, and to value a steady salary in a "safe" job, preferably with a pension attached, rather than to face the risks of an independent business life which might end in disaster through the operation of factors beyond both one's foresight and one's control.

Granted the necessity for a "planned economy", some control, either direct or indirect, of the country's labour force becomes necessary The national preference is undoubtedly fairly well defined for indirect rather than direct control The control of materials implies a resultant control of labour, since limitation of materials, either for manufacture or for consumption, will result in a limitation of the labour force engaged in their processing and distribution Alternatively, control may be exercised by a system of licensing, as in the building trade, or again by the establish-

ment of maximum standards of quality and finish, as in "utility" goods Direct control, which, during the war, was universal, however, has not been entirely dispensed with For example, workers occupied in "essential" occupations such as agriculture and coal-mining cannot change to a different occupation without the consent of the Minister of Labour and National Service, and the latter has powers of direction in certain cases where a person may wish to take up a "non-essential" occupation or to take up none at all.

The total population of Great Britain is estimated at 48,671,000, of whom 5,169,000 are in Scotland, and the total working population is estimated at 23,164,000, which is made up of 16,053,000 males and 7,111,000 females This working population is divided among various occupations as follows H.M forces and women's services—785,000, agriculture, forestry, and fishing—1,269,000; mining and quarrying—870,000, manufacturing industries—8,225,000, building and contracting—1,465,000, gas, electricity, and water—305,000, transport and communication—1,793,000, distributive trades—2,736,000, professional, financial, and miscellaneous services—3,877,000, national government service—692,000, local government service—776,000, on release leave—39,000, unemployed—332,000

A regional analysis of these figures shows that 1,690,000 live in London and south-eastern England, 344,000 in the eastern, 265,000 in the southern, and 325,000 in the south-western districts, 1,073,000 in the midlands, 605,000 in the north midlands, 824,000 in the East and West Ridings, 1,422,000 in the north-western and 398,000 in the northern areas, and 248,000 in Wales The heavier industries tend to congregate in the north and midlands, within easy reach of raw materials and fuel, while lighter industries predominate in the south The main agricultural areas also lie in the south, while the chief fishing ports lie on the north-east coast

Social Structure

The outlook of parents, friends, and others of his own social class will clearly have a powerful effect on the outlook of the growing child and so on his choice of career It is therefore necessary to proceed now to some account of the social structure of the country.

During the nineteenth century such an account would have been fairly simple It was common then to make a tripartite division, either according to wealth into rich, middle-class, and poor, or according to status into upper, middle, and lower classes Great changes, however, accelerated by the two world wars, have been taking place during this century. High taxation and death duties —income-tax may rise as high as 19*s.* 6*d.* in the £ and death

duties to 75 per cent.—have led to the virtual extinction of "the rich" while the increasing provision of free education culminating in the 1944 Act, of which more will be said later, increased wages, food subsidies, rent controls and subsidies, child allowances and national health and insurance schemes, have led to the disappearance of "the poor". A comparison of returns for 1938 and 1947 shows that while the numbers of people in receipt of incomes between £2,000 and £10,000 a year had risen by 62 per cent. in the intervening period, the numbers of those receiving between £250 and £500 had risen by no less than 230 per cent If the value of the "free" benefits referred to above, which has been estimated to average about £1 a week for each family, were to be counted in, this latter figure would stand still higher

With the progressive decline in the size of estates left to be inherited, the increase in the death duties on those that are left, and the reduction by heavy taxation of the unearned income accruing from the residue, inherited wealth has now lost its former importance in conferring social status For all but a small minority, the factor of main importance in their standard of living is the size of their earned incomes. The range of these, already brought within a narrower compass than ever before, is still further narrowed by the incidence of taxation, so that while on paper one man may be receiving £500 a year and another £5,000, after payment of income-tax, assuming both to be married and to have two children, one will receive £477 10*s*. and the other £2,598. With the possible exception of a few members of the Bar, the highest incomes are to be found in commerce and industry, and it is noteworthy that these, which even in the latter days of last century were looked at askance by "society", are now regarded (especially when connected with export) with the highest esteem Members of some of the professions, for example, doctors, lawyers, dentists, and senior civil servants, are still well represented among those who command incomes well above the average, but the lower one goes in the income scale the more difficult it is to single out any employment as more remunerative than any other The works foreman may earn more than the doctor, the barrow boy as much as the headmaster, the hospital maid as much as the trained nurse or teacher. This is particularly noticeable at the lower end of the range, where there is a striking uniformity of income. A bricklayer in steady employment will earn about £340 in a year, a police constable starts at over £330 p a.; the minimum underground wage for a coalminer amounts to £299 p a , a road-sweeper may get £275, the initial salary of a qualified teacher is £300.

It is to be expected that this disappearance of marked distinction between the monetary rewards obtained in different occupations will tend to bring about a lessening of the distinction in

social esteem in which the occupations are held. This, however, is likely to take time, in fact, to require the rise of a new generation. Those who have already formed their scale of social values do not readily change it because of economic circumstances They may come to terms with a new social order and in many ways adapt themselves to it, but they are apt to do so with regret and to retain a belief in the superiority of the old scale of values over the new An army officer, for example, who has always considered coalmining as a dirty, messy, and distinctly "common" job, will not necessarily change his view of it or think it any more desirable as an occupation for his son than he did before, just because it offers pay and prospects comparable to what his son would get if he followed in his own footsteps and entered the army It does mean, however, that some of the factors which contributed to the forming of his own adverse view have disappeared, and his son and others of the same generation may regard the occupation less unfavourably

The evening-up of the rewards obtainable in the various occupations may be expected to hasten the final disappearance of distinction between occupations in terms of the social status they confer. Social differences will undoubtedly continue, but it seems likely they will come to be based on the degree of eminence achieved in one's occupation rather than upon that occupation *per se*. This will mark the culmination of a process which has been going on for a long time It is natural for men, having inherited or achieved a certain standing in society, to wish to continue that standing both for themselves and for their heirs During the nineteenth century, the number of occupations compatible with a good social standing was very limited The Church, the army and navy, the law, medicine, the civil service these were practically the only careers which could be considered Commerce and industry were allowable, provided the connection were not too close. It was not considered reprehensible to own a coalmine or a steelworks, especially if it were offset by ownership of a country estate (which was almost certain to be a financial liability), but it would not be quite the thing to have too much to do with the day-to-day details of running the business In short, one might almost say it was permissible to receive an income from such a source, but not to earn it.

In the main, this outlook has long since passed away, although vestiges still remain

Occupations have lost their exclusiveness, and in general are open to all who have the ability to enter them, entry being no longer open or barred according to the level of society in which one has been born and reared As a consequence, occupations in themselves are ceasing to confer social distinction, so that there are not the same grounds as formerly for entering one rather than

another. Thus in the army, for example, not only is promotion to the highest rank open to men of ability, no matter what the social distinction or lack of distinction attending their birth and education, but admission to a commission can now be gained only after a period of service in the ranks

The force, however, of the tradition that certain occupations confer social distinction is still considerable, and is no doubt often powerful in influencing a parent's advice on the careers his sons should adopt The son of a labourer or an artisan, for example, might well be encouraged by his parents to take orders, not for the sake of the remuneration, which would be likely to be very meagre, but for the sake of the prestige such an occupation would be thought to confer Conversely, however, a parent who had himself spent his life in a "prestige" career, seeing the financial rewards obtainable in industry and commerce, might well encourage his son to enter a factory or a store.

In the case of women's careers, the same tradition of social distinction between careers has not existed There were several reasons for this. In the first place, the entry of educated women into any career (apart from that of housewife) began to take place only in relatively recent times, when social attitudes were already changing Then, for a woman to enter any occupation, professional or commercial, was difficult to begin with, and the women who succeeded in doing so thereby achieved distinction This distinction was not, however, in the early days one which would be regarded with general approval Women who entered careers generally did so either in order to make themselves self-supporting and thus independent of men, or to promote the emancipation of women. In either case their success would be likely to meet with the approval only of the minority who held views similar to their own, and the question of the relative social distinction as between one career and another did not therefore arise. Then again, the majority found employment as secretaries, cashiers, typists, saleswomen, etc., in the commercial world, between the different branches of which there was generally no great disparity of esteem As the professions were opened to women there were entrants to these, but any distinction conferred derived perhaps not so much from the nature of the profession as from the fact of having stormed what had previously been a purely masculine stronghold.

Since the earliest days of the growth of industry, women of the poorer classes had, of course, found employment in factories. The mechanical work in them, however, and the uncongenial nature of their surroundings and association, offered neither appeal nor scope at first for educated women. However, the growth in the establishment of light industries, the erection of modern buildings, the improvement of working conditions and provision of amenities,

increased wages, together with the increasing complexity of the productive unit, which necessitated a higher proportion of educated personnel, all tended to cause the disappearance of any sharp distinction in esteem between work in a factory and work in an office.

In nursing, that pre-eminently feminine profession, the hard work and the meagre remuneration in the main precluded the entry of any but those who had a genuine sense of vocation In this respect the profession resembled the ministry of the Church to-day, but, while those who had entered it received the respect due to their sacrifice and their service, the nursing profession, unlike the Church, had no long tradition of reverence and authority which could endow its members with any high degree of social distinction

It is unnecessary here to deal in detail with the numerous factors which have conduced to the changes which have taken and are taking place in the degree of social esteem in which various occupations are held. Some reference must, however, be made to the ever-increasing importance of technology in practically all types of work This, by multiplying trades, has led to a widespread breakdown of distinctions between different occupations.

Formerly the craftsmen were in a minority the carpenter or the farrier, for example, might ply his trade in the army, in agriculture, or in a colliery, and be occupied with the same trade though in very different surroundings. The majority of those in these occupations, however, would find little similarity among them One might say that the soldier handled a rifle, the farm labourer a hoe, and the coalminer a pick, and there was practically nothing in common in their work Now, however, the soldier driving a Bren carrier, the farm labourer handling a tractor, and the coalminer operating a mechanical cutter are tradesmen with a great deal in common one with another. The development of technology, therefore, while necessitating a great increase in specialisation, has at the same time made it easier for the skilled man to move from one industry to another. The settings of the industries and their final products may be very different, but the work performed in any of them may be substantially the same.

Besides the actual remuneration and the prospects of advancement, working conditions play an important part in the popularity or otherwise of an occupation The length of the working week, the number of hours a day, "broken" time, modernity or otherwise of buildings and equipment, the amenities provided such as canteens, sports clubs, radio, the actual nature of the work—all these and many other factors contribute to the degree of esteem in which an occupation is held. Where the latter can offer not only good wages but other substantial attractions as well, it will have no difficulty in obtaining employees. Where, however, it is

housed in unattractive buildings and lacks modern amenities it may experience considerable difficulty

The Educational Structure

After the foregoing description of the economic and social structure of the country we can now consider the provision made for education and the ways in which this may affect choice of a career Perhaps the most striking feature of this provision is the existence of two parallel systems, one provided from private and voluntary sources, and the other by public funds (This is an over-simplification, as will appear later) Space does not permit of a description of how this duality arose, the one system having its roots in the old endowed grammar schools, the "public" and proprietary schools, and the nonconformist academies, and the other arising, at a much later date, from its first beginnings in the form of assistance to voluntary bodies to its culmination in the 1944 Act providing not only for free primary and secondary education between the ages of 5 and 15 years, but also for nursery schools and further and adult education Two points, however, in connection with the latter system should be borne in mind.

In the first place, the intervention of the State in education began in the field of elementary education for the poorer classes and it remained almost confined to this throughout the nineteenth century. It thus came to be associated in people's minds not only with the "lower" classes of society, but also with an inferior kind of education directed at equipping the labouring classes to occupy the lowly position in life to which—so it was believed—God had called them At the same time, throughout the nineteenth century elementary education suffered from a tradition of cheapness At the time of the introduction in 1862 of the system of "payment by results" it was claimed on behalf of the system that if it was not cheap it would be efficient, and if it was not efficient it would be cheap. This tradition had adverse effects on the provision of staff, equipment, and buildings, and the effects are still all too plainly discernible. Equipment and the quality of staff have vastly improved, but even to-day 29 per cent. of all primary classes in the country have over forty pupils, while a further 20 per cent have between thirty-six and forty. As for buildings, a large proportion are quite unsuited to modern conditions. Satisfactory adaptation is rarely possible, while in these days of shortages of labour and materials demolition and rebuilding are beset with difficulties In urban areas, the finding of adequate sites raises further obstacles.

The second point to be borne in mind is that State-provided secondary education is of relatively recent origin and grew out of the provision of elementary education On the technical side it

had associations with occupations regarded as proper to the lower and lower-middle classes On the academic side it was modelled largely on that given in the grammar schools. In view of this affinity with the elementary schools it was natural that the social attitudes to the elementary schools should apply also to the county secondary schools established after the Act of 1902, and that they should often be regarded as inferior copies of the grammar schools. It is only under the 1944 Act that the provision of free secondary education for all children up to the minimum age of 15 has become a statutory duty of the local authorities. A new nomenclature came into use, by which the term "secondary grammar" was used to describe schools following an academic curriculum, "secondary technical" to describe those providing a technical curriculum, and "secondary modern" other schools Chief among the problems set by the raising of the compulsory school age to 15 was the nature of the education to be given in the secondary modern schools The existing types of secondary education, grammar and technical, were both based on the assumption that the pupil's schooling would continue beyond that age, and both were directed to more or less well-defined ends The grammar school prepared its pupils for the School Certificate, which was the gateway to the universities and to numerous occupations besides, the secondary technical school prepared them for the technical college. Not only did the secondary modern school not have any such defined goal to simplify the ordering of the curriculum, but in some ways it carried a heavier responsibility than either of the other types of secondary school, in that for the majority of its pupils there would be no further period of compulsory education, at any rate until the county colleges, giving part-time education up to the age of 18, should come into being

It is unnecessary for our purpose to describe how the problems of the modern school are being met What is relevant is the likely attitude of both parents and pupils to a type of school which does not seem to them to prepare its pupils for anything in particular. It is natural that it should be regarded as less desirable than the grammar school, which would be looked upon as the way to the most-esteemed and, in general, the best-rewarded occupations, or than the technical school, which would normally have a bias toward a particular trade or trades. This outlook would also naturally receive additional support from the fact that entry to the different types of secondary education is determined by examination, those acquitting themselves best going to the grammar school, those showing special aptitude going to the technical school, and the remainder going to the modern school. Further, in the immediate post-war period building is difficult, and many secondary modern schools therefore have to function in the premises formerly occupied by the upper forms of the old elementary schools. It

would thus, in many cases, be hard for either parents or pupils to realise that the latter were, in fact, attending a secondary school, and not still attending an elementary school with the leaving-age raised to 15 instead of 14.

The obvious difficulties in achieving "parity of esteem" as between the modern and other types of secondary school has led to the support by a number of local authorities—notably London—of proposals for multilateral schools. In these the tripartite division into grammar, technical, and modern streams would be retained, but it is argued that, since they would form part of the same school, disparity of esteem among them would not arise

What has been said above may serve to make more understandable what many people outside Britain find surprising, namely that a substantial number of parents do all they can to avoid sending their children to schools run by the local authorities, and instead go to great expense and often considerable sacrifice in order to send them to public (in the English sense) or proprietary schools. This is particularly true of parents in the upper- and middle-income groups Usually they themselves are the products of public or proprietary schools or, if not, have at any rate grown up in a generation in which the education given by these schools was considered superior to that given in the local authorities' schools, and in which such an education was still a strong recommendation in entering what they regarded as the most desirable types of employment

In so far as having been at a particular school or type of school may still be considered an asset, it is always the school giving education at the secondary stage which is held to confer distinction, and not the school or schools attended before that In view, therefore, of the sacrifice which many parents have to make to send their children to public or proprietary schools, it might be wondered why, for the primary stage at any rate, they do not avail themselves of the provision made by the local authorities. The reason why they do not do so, in the main, is probably fear that their children will pick up bad habits—particularly in manner and speech. Accent in England both marks and creates social distinctions Admittedly there is no one form of "correct" pronunciation or intonation, as any one will readily appreciate who has noted the variations in use by, for example, the B.B.C., which in its broadcasts aims at a good "standard" English There are wide variations in, but readily recognisable limits to, the pronunciation and intonation of educated speech; usages outside these limits, where they do not indicate that the language is not the mother tongue, normally indicate either lack of education or at any rate upbringing in a largely uneducated environment. The parents' fear lest their children should acquire a "bad" accent has a twofold basis. In the first place habits acquired in the early years of childhood, especially

habits of speech, are usually regarded as persistent and, while not totally eradicable, such as can be overcome only with great difficulty in later years Secondly, bad speech on the part of their children will be a perpetual reminder to themselves and be an indication to relatives and friends that they are not being brought up in as educated an atmosphere as the parents were, and will therefore be in some degree a confession of failure to pass on to their children the standards which they themselves had inherited.

From what has been said it will be clear that the influence on the child of the social status and of the outlook of the parents will be twofold In the first place it will be a direct influence, exerted during the years of the child's close association with the parents. Secondly, it will be an indirect one, operating through the parents' choice of the type of school which their child shall attend. At this stage it is desirable to consider in more detail the types of school which exist for the child to attend, and in this connection it will be convenient for the sake of brevity to use the terms "State" and "non-State" schools. Since these terms, however, are not part of the normal English educational terminology and might easily be misunderstood, it is necessary to give some indication of the sense in which they are here used

There are no "State" schools in England in the sense of schools run by the central Government [1], the provision of schools is the responsibility of the local authorities, i.e. the county borough councils and the county councils. These may either establish and maintain their own schools or maintain or assist schools established by other bodies Out of a total of 30,837 maintained and assisted primary and secondary schools or departments in England and Wales in 1947, 18,553 were county borough or county schools or departments, 9,730 Church of England, 1,904 Roman Catholic, 121 Methodist, and 529 other It is thus clear that there is likely to be a very considerable diversity among the "State" schools, and when one further takes into account the varying degrees of assistance given to, and control exercised over, different schools, the differences caused by locality—e g. industrial, suburban, rural—and in addition the freedom given to all schools to frame their own curricula and employ their own teaching methods, it will be seen that generalisations as to the nature of the "State" schools, or as attempted above, as to people's attitudes towards them, are fraught with grave possibilities of misstatement.

The "non-State" schools are no less difficult to treat of in general terms. There is, for example, no one definition of what is meant by a "public" school, nor any single explanation of the origin of the term. The Committee on Public Schools, in their

[1] Apart from a few schools run, e g, by the Home Office, for young delinquents, or by the War Office, the Admiralty, and other Ministries.

report of 1944, list a total of 109 schools to which the term is commonly attached. They may be large or small, ancient or modern, boarding or day, secular or denominational, town or country, single sex or co-educational. There is, then, the wide range of proprietary independent schools, ranging from those which can vie in size, amenities, and quality with all but the best of the public schools, to small one-teacher enterprises. Then, again, there are the direct-grant schools, of which there were 192 in 1947 These receive a grant direct from the Ministry upon certain conditions Although outside the State systems, the public schools and proprietary schools generally invite inspection by the Ministry of Education, and if found satisfactory are recognised as "efficient" In 1947 there were 448 primary and 459 secondary schools so recognised, with totals of 42,427 and 118,596 pupils respectively

Of the 5,340,091 pupils in grant-aided schools or departments and other schools recognised as efficient in 1947, no less than 5,083,122 were in schools maintained and assisted by local authorities Thus a total of only, in round figures, some 250,000, or less than 5 per cent of the school population, were being educated in direct-grant schools and other schools recognised as efficient, and of these probably only some 100,000 odd were attending public schools Owing, however, to the traditional prestige of these schools, to the high proportion of their "old boys" to be found in eminent positions in all walks of life, as well as to the generally good quality of the entrants they get and to the high standards of attainment which this and their facilities in the way of staff and equipment enable them to reach, the influence which they exert is out of all proportion to their numbers

Thus far we have considered some of the influences which may surround the child from birth and tend to set him upon a road which might lead him toward one type of career rather than another It is now time to say something about his actual schooling Let us take first the case of a child whose parents intend to send him (or her) to a public or proprietary school As we have seen, such a decision would arise from the parents' own upbringing and outlook, and so would generally tend to influence the child's upbringing from his earliest days. (Indeed, the decision will often need to be taken early, since in order to gain admission to some of the major schools it may be necessary to register the child's name practically at birth)

The usual age at which pupils enter the public schools is 13+, and they must beforehand have passed the Common Entrance Examination Since this includes Latin and French, subjects which are not taught in the "State" primary schools, it is generally necessary for candidates to get their primary education at a preparatory school. Some public schools have their own preparatory schools, but most of these schools are proprietary concerns, board-

ing or day, with fees ranging from about £60 a year to £300 or more In some cases, of course, pupils will transfer from preparatory schools to the "State" system, and this may happen especially when a child is able to gain entry to a grammar school of which the parents approve, or when the parents find themselves no longer able to afford to send him to a fee-paying school Conversely, it is possible for a limited number of children to gain scholarships from a "State" school to a public or proprietary school. In the main, however, scholarships at these schools, owing to the common requirement of Latin, and sometimes of Greek, go to pupils from the preparatory schools.

Should a boy fail the Common Entrance Examination he will normally be unable to gain entry into a public school, and will have to seek some proprietary school which has a vacancy and is prepared to admit him In most cases, probably only financial necessity would induce the parents to consider the "State" schools, since there would be very little chance of his gaining a place in a grammar school

So far as scholastic attainment is concerned, the major public schools expect the great majority of their pupils to take the School Certificate Examination and then to remain at school for one, two, or even three years afterwards The lesser public schools and the proprietary schools encourage their pupils to do likewise, but the numbers who do so vary, of course, according to the size and nature of the school and the intellectual ability of its pupils Similarly, the number of those who go on to the universities varies greatly, from practically the full number of school leavers in the case of the great schools to an occasional one or two in the case of the minor ones

The School Certificate stage is important in its effects on the subsequent choice of a career Up to it the courses followed by the pupils have a large measure of uniformity, though a fair amount of provision is made for individuals to select or reject subjects they like or dislike After it, however, they will begin to specialise, the degree to which they do so and the subjects they choose varying according to the policy of the school and the range of subjects which it is able to offer. By this time, of course, the pupil may already have decided upon the career he wishes to take up and the type of degree or other qualification he needs for it, and will make his choice of subjects accordingly. In any case, however, the choice made at this time will usually largely determine the nature of the university degree or other qualification gained and, thus, of the occupation taken up thereafter. The factors affecting this choice are numerous and defy any attempt at relative assessment Family influence is often potent likes or dislikes may have been acquired during the preceding years of schooling—often, it may be, for very trivial reasons: examination

results may suggest more likelihood of success in one direction than in another underlying all there is the possibility of there being that inner urge which predisposes an individual towards a certain course without his or anybody else's being able to point to any particular reason why.

In the case of those who leave school a year or two after passing the School Certificate, and do not go on to a university or pursue any definite course of study elsewhere, it is unlikely that the short period of specialisation they have spent will have much effect upon their choice of occupation. In the main they are likely to go into, for example, banking or insurance or one of the many branches of commercial life, in which the possession of a general education of a standard such as that evidenced by the possession of a School Certificate is necessary, but which makes no demand for specialisation, at any rate of the type usually found in sixth forms.

Figures for the educational year ending July 1947 show that of 4,974 boys leaving direct-grant grammar schools during that period, 8 per cent. left before the age of 15, 12 per cent at 15, 32 per cent. at 16, 25 per cent at 17, 22 per cent at 18, and 1 per cent at 19 or over For a total of 4,869 girls the corresponding figures were 7 per cent. before the age of 15, 13 per cent. at 15, 36 per cent at 16, 24 per cent at 17, 18 per cent at 18, and 2 per cent at 19 or over (All these percentages are, of course, approximate)

Those leaving before the age of 15, which since 1st April, 1947, has been the upper limit of the compulsory school age, would naturally pass, in the main, to other educational institutions Of those leaving after that age, 25 per cent of the boys and 43 per cent. of the girls left for further full-time education in universities, training colleges, establishments for further education, and other institutions Sixteen per cent of the boys and under 2 per cent of the girls went into agriculture, mining, and the manufacturing industries 3 per cent. of the boys and 1 per cent of the girls into transport and distribution 27 per cent of the boys and 33 per cent of the girls into clerical and professional work 19 per cent of the boys into the armed forces and the police 6 per cent. of the girls into nursing and 1 per cent. into domestic work. The remaining 10 per cent. of the boys and 14 per cent. of the girls left for other or unknown employments or for other reasons.

It is probably true of almost all public and proprietary schools to say that they take a close interest in the question of what careers their pupils shall adopt. In the smaller schools it may be the headmaster who takes the chief interest in others the house masters. Some schools appoint careers masters whose special responsibility it is to be acquainted with the conditions of entry into and the terms of service in the various careers which the

pupils might consider following, and to advise upon a selection. Usually no form of intelligence or aptitude testing is carried out in this connection, reliance being placed upon the knowledge of the boy's character and capabilities gained by the staff during his years at the school. Actual placing is also carried out, but the importance of this tends to vary with the status of the school, since it is probable that parents who are in a position to send their son to one of the major schools will have connections which will facilitate starting off their son in a career once he has made up his mind what he wants to do and has shown some promise of being successful in it.

Let us now consider the progress of a child through the "State" system Here the primary stage is extremely important, because at the age of 11+ arrangements are made for allocation to a secondary school This is done on the basis of the primary school records and of the results of an examination which is in fact, whether admittedly or not, a competitive examination to determine who shall get the available places in the secondary grammar schools The examination, being the responsibility of the local authorities, is not uniform throughout the country, though in practice a high degree of uniformity does exist. It normally consists of group intelligence, attainment, and aptitude tests, standardised so as to eliminate, or at any rate reduce to a minimum, variations in marking The proportion of grammar school places available is again not uniform, but varies generally from 10 per cent to 20 per cent of the secondary school population. There is some variance in the methods by which the results of the examination are reduced to a final order, and again in the means by which allocation is made to a particular grammar school as well as in the extent to which the headmaster or headmistress has the power of selection

It is generally admitted that the age of 11+ as the time for selection for secondary education was made on administrative rather than on educational grounds, and there has been considerable criticism of the choice on the ground that this age is too early for any special aptitudes to show themselves Provision is certainly made for transfer from one school or one course to another at a later stage should this appear desirable, but in practice this is not easy. Transfer from a grammar school to another type of school would generally be regarded as demotion by the pupil and parents concerned and would be opposed, so that it might prove very difficult to carry out unless there were very clearly demonstrable grounds for it. Similarly, a pupil in, say, a modern school would have to be outstandingly good before the question of transfer to a grammar school would arise, and even then the modern school staff might not consider it in the best interests either of the pupil or of the school that one of their star pupils should be

transferred to pursue what might after all prove to be only a mediocre career in a grammar school The question of multilateral schools as a solution has already been referred to, and many people are of the opinion that all types of secondary school should follow much the same sort of course for the first two years and that there should be a fairly thoroughgoing review of placings at the age of 13+. Whatever course may eventually be adopted, however, it is clear that at present the examination at the age of 11+ plays a very significant part in determining the course of the child's education after that age and therefore in affecting the type of occupation he ultimately enters

The differences in the distribution of occupations entered by school leavers as between the various types of secondary school are striking Of a total of 179,258 school leavers from boys' secondary schools during the educational year ending July 1947, 119,631 came from modern and all-age schools, 43,400 from grammar schools, and 16,187 from technical schools While 2,993 of those leaving the grammar schools left for full-time education at the universities and 280 at training colleges, only 14 left the modern schools and 14 the technical to go to universities, and 4 and 11 respectively to go to training colleges In all, 7 per cent of the modern school leavers left for full-time education at universities, training colleges, establishments for further education, and other institutions, 55 per cent left to enter agriculture, mining, and manufacturing industries, 15 per cent to enter transport and distribution, and 7 per cent to enter clerical and professional work. Of the technical school leavers, 6 per cent left for further education, 67 per cent to enter agriculture, mining, and manufacturing industries, 3 per cent. to enter transport and distribution, and 9 per cent. to enter clerical and professional work Of the grammar school leavers, 15 per cent left for further education, 23 per cent. to enter agriculture, mining, and manufacturing industries, 5 per cent transport and distribution, 27 per cent clerical and professional work, and 15 per cent. the armed forces and police.

The corresponding figures for girls leaving school were modern schools further education—8 per cent , agriculture, mining, and manufacturing industries—27 per cent., transport and distribution —17 per cent., clerical and professional—18 per cent ; domestic work—11 per cent. (Housewives who find it impossible to get domestic help may find it hard to believe that some 14,000 school leavers annually enter domestic work, but this term, of course, covers much more than employment in homes) Technical schools further education—5 per cent ; agriculture, mining, and manufacturing industries—6 per cent.; transport and distribution—4 per cent.; clerical and professional work—62 per cent.; nursing—4 per cent.; domestic work—3 per cent. Grammar schools further

education—29 per cent.; agriculture, mining, and manufacturing industries—3 per cent, transport and distribution—3 per cent., clerical and professional work—40 per cent; nursing—7 per cent., domestic work—2 per cent.

The Youth Employment Service

The actual content of the courses provided in the grammar, modern and technical schools has been the subject of so much exposition elsewhere that discussion of it may perhaps be omitted here As already pointed out, the grammar school and the technical school have fairly well-defined ends to work for, so far as the question of the pupils' future occupations is concerned The School Certificate serves as the preliminary requirement for a wide range of occupations, while the technical school gives a bias towards some occupation or group of occupations The modern school, however, has not got its occupational aims so clearly defined. In all types of school a good deal of counselling, especially of an informal nature, and a certain amount of placing —particularly perhaps in technical and rural schools—are often done For such work to be done properly, however, and in the best interests both of the pupil and of the community, it is clear that some much more widespread and better-integrated provision needs to be made, and to meet this need the Youth Employment Service has been developed

This service has a history dating back to 1909, but in its present form and under the present name it was constituted under Part II of the Employment and Training Act of 1948 The service is the responsibility of the Minister of Labour and National Service It is operated throughout England, Wales, and Scotland, and is available to persons under the age of 18 and to persons over that age who are still attending school Control is exercised through the Central Youth Employment Executive, which is staffed by officers of the Minister of Labour and National Service, the Minister of Education, and the Secretary of State for Scotland The Minister of Labour and National Service is advised by a National Youth Employment Council, which is in turn advised by two Committees, one for Scotland and one for Wales. Advice may take the form both of reports required by the Minister and of representations made on the initiative of the Council or the Committees

The service may be operated either direct by the Minister responsible or by the local education authorities, with the approval of the Minister In the latter case, consultation and co-operation with other local education authorities may be required. Out of 146 local authorities, 115 have put in schemes for operating the service Any local authority desiring to discontinue operation must give not less than six months' notice, and the Minister may

revoke an order for operating the service if the local authority does not take adequate steps to introduce or maintain it.

The Committee on the Juvenile Employment Service, in their Report published in 1945, commonly known as the Ince Report, had recommended that registration with the service, probably by transferring to it the school record card or an abstract therefrom, should be compulsory on all school leavers Such compulsion was not embodied in the Act, and therefore the child has the choice of registering with the service or not If he does register, however, the Act makes it compulsory for the school to supply such particulars of his health, ability, educational attainments, and aptitudes as the Minister may think necessary in order to give adequate advice and assistance Such particulars are confidential, but may be examined by the child's parent or guardian

The work carried out by the Youth Employment Service falls into four stages First there are talks given in the schools to those who will be leaving within the course of the next year, supplemented by pamphlets and perhaps films and by visits by the pupils to places of employment The boys and girls are thus given information covering a wide field of suitable employment Next comes the school leaver's interview For this the Youth Employment Officer is supplied beforehand with as much information as possible on the pupil's health, ability, educational attainments and aptitudes, and also on his interests, dispositions, and circumstances The information collated under these seven headings forms the basis of the interviewer's assessment of the child and of the advice which he gives to him. The third stage is placing in employment, and here again the same seven-point plan is used in assessing the suitability of occupations and particular vacancies, so that successful "matching" may be carried out. Fourthly, there is a review of progress Boys and girls who have received vocational guidance are asked to come back and tell the Employment Officer how they are getting on, and for this purpose "open evenings" are held so that they can come outside working hours

It sometimes happens that boys and girls are found who have marked aptitudes for skilled crafts and for whom suitable facilities for training are not available within travelling distance of their homes. In 1947, therefore, in accordance with one of the recommendations of the Ince Report, a scheme was adopted by which financial assistance, in the form of travelling, settling-in, and maintenance grants, may be given in such cases to enable training for a skilled occupation to be taken up with employers in other areas. Another recommendation of the Report was that each main industry should be encouraged to set up (where a suitable organisation did not already exist) a National Joint Apprenticeship and Training Council or other appropriate machinery, and special local Industrial Committees to work in co-operation with the Juvenile

(as it then was) Employment Service. The Report also recommended that each industry should be urged to establish agreed standards of employment for its young workers and to appoint qualified persons responsible for the recruiting, training, and welfare of young workers and apprentice supervisors. As a result of these recommendations over fifty sections of industry have agreed upon appropriate national arrangements and have provided for close co-operation with the Youth Employment Service

The scope of the Youth Employment Service may be judged from the following figures for 1948, during which period an estimated total of 310,894 young persons under the age of 18 entered insurable work for the first time. School-leaving reports received by the service totalled 311,569, and 289,907 school leavers were given individual advice 113,555 applicants, or over 36 per cent of all those entering employment, were placed by the service in their first jobs Follow-up action was taken in the case of 236,598, thus making a total of 335,015 placed in employment There were 992 applications for grants under the special aptitudes training scheme referred to above, of whom 678, or about 68 per cent. were accepted

As for the reasons which determine the actual choice of a job, experience seems to indicate that there are seven factors of major importance, namely the wage, the prospects of advancement, the nature of the job, the location of the job, the working days and hours, welfare conditions and parental influence, but no over-all assessment of the relative weights of these factors is at present possible.

Further Education

The 1944 Act provides that all those between the ages of 15 and 18 who are not in full-time attendance at an educational centre will have to attend part-time for a period amounting to forty-four days in a year at an establishment for further education. Provision is made for pupils to attend either in a block period or at the rate of one day or in two half-days a week. This enactment has not yet come into force, but there is already, thanks to the readiness of many employers to release the young people on their staffs, a considerable measure of attendance, the numbers so released having risen from about 42,000 in 1938 to 167,403 in 1947. The young people attending the classes have, of course, already made their initial choice of occupation, but the opportunities afforded them of improving their general knowledge, broadening their outlook, and developing their interests are likely to be of considerable importance in fitting them ultimately for posts of higher responsibility.

It is probably true to say that, not only in the case of those

receiving further education under part-time day-release schemes, but of those receiving further education generally, the main trend of their occupation, though perhaps not the actual occupation itself, is generally settled and that the further education is pursued with an aim to advancement in that occupation. However, it often happens that a course is taken with a view to qualifying for a change of occupation and frequently, too, from mere unvocational interest. There were in 1947 in England and Wales a total of 6,544 establishments for further education, with an enrolment of 1,680,555. Of these 28 per cent were full-time students and 72 per cent. part-time No less than 85 per cent. of the total enrolment was comprised of evening students, who studied the following subjects (figures in brackets denote the number of subdivisions of each subject) English, languages other than English (19), social sciences (10), mental and moral sciences (4), mathematics and natural sciences (15), art (13), handicrafts (10), music and elocution (6), physical culture (7), first-aid and hygiene (2), agriculture (8), fishery subjects, nautical occupations (4), mining and quarrying (5), building (11), woodworking trades (6), quantity and other surveying (3), architecture (2), structural engineering (2), glass, pottery, and earthenware manufacture, coal and coal products (4), oils and fats (3), textile chemical industries (5), other chemical industries (7), metal manufacture (4), engineering (22), electrical and wireless engineering (17), aeronautical engineering (3), watch, clock, and instrument making (2), textile industries (10), clothing manufacture (9), food processing (7), other manufacturing occupations and trades (6), printing and allied occupations (5), professional occupations (15), commerce and management (6), clerical (5), wholesale and retail trade (8), public health (3), transport (4), personal services (4), needlecraft (9), child care and nursing (3), other women's subjects (5).

Service in the Armed Forces

Under the National Service Acts of 1947 and 1948 all youths become liable for National Service—i.e. service in the Navy, Army, or Air Force—for a period of eighteen months. Service may be deferred in cases where service at 18 would mean detrimental interruption of studies Clearly this period, involving a complete change of acquaintances and environment, with possibly experience overseas, may have a considerable influence on a young man's outlook and affect his choice of occupation upon his return to civilian life

The great majority of National Service recruits will have been following some occupation for two or three years before being called up It is naturally the policy of the Services, in the interests of efficiency, to employ conscripts, so far as may be possible, in

trades in which they have had experience In any case, all entrants undergo tests designed to reveal their aptitudes, so that they can be put to the type of work for which they may be best suited Details of the educational schemes naturally vary among the three Services according to the differing conditions obtaining in them, but in broad outline there is general agreement Provision is made for some basic or general compulsory education in service time, as well as for voluntary and individual education in leisure time Facilities provided by local education authorities—at, for example, technical colleges—are widely used when distance permits Fees, when payable, are provided by the forces No less than 72 per cent of R A F stations make use of such facilities. In addition, to provide for those who may be unable, because of the specialised nature of the training they want or because of the isolation of their stations, to obtain the instruction they require, there is a comprehensive correspondence course This provides a selection of some five hundred courses, and the army alone has an enrolment of about fifteen thousand While the education is centred upon the individual's occupation as a sailor, soldier, or airman, and technical instruction must frequently play a large part, every effort is made to render the education as broad and enlightened as possible Discipline will always be necessary in a fighting service, but it is no longer enough that obedience should be "blind". it must be understanding and informed Great importance is attached to current affairs and to education for citizenship, and it is the aim that the conscript should re-enter civilian life better, not worse, equipped as a result of his period of National Service

For both the regular and the National Service personnel information and advice on resettlement in civilian life is available. In the Royal Air Force, for example, the station education officer will give applicants factual information on occupations—often in the form of the career booklets issued by the Ministry of Labour and National Service This Ministry also collaborates with the three Services in the issue of a monthly bulletin. This gives information on, for example, the resettlement in civil life of ex-regular personnel, information from the Ministry of Labour and National Service on courses of training and employment prospects, and information from other Government departments or authoritative sources on matters affecting training or employment. Information is also given on overseas settlement. Should advice be required the applicant is passed to the group education officer, who will have undergone a training course in vocational guidance. If necessary, the applicant may undergo written aptitude tests, usually of types devised by the National Institute of Industrial Psychology, although others may also be used. During a recent twelve-months period there were 12,500 applicants for information, of whom

approximately 8 per cent. desired advice, and approximately 3 per cent. were tested.

The Universities

The two most notable changes which have taken place in the universities since the war are the increases in the number of students and in the number of scholarships awarded In 1947 the total of full-time students in universities in England and Wales was 60,969, as compared with 40,212 in 1939—a rise of over 50 per cent. The expansion was least marked in Cambridge and London—the former expanding by about 17 per cent to a total of 6,943, and the latter by about 20 per cent to a total of 15,789—whereas in the other fifteen universities and university colleges the expansion averaged 84 per cent When allowance has been made for the 7,000-odd students who came from overseas, the number now admitted therefore makes it possible for about 3 2 per cent of those in the appropriate age-groups to enter universities, as compared with a little over 2 per cent before the war A further increase in numbers, to a total of about 70,000, is planned to take place during the period 1946–56 This increase would not have been possible had it not been for a marked increase in the financial assistance accorded to students In 1936 the proportion of university students in receipt of assistance was 40 per cent in 1947 this had risen to 69 per cent Assistance comes from various sources, of which the two main are the State scholarships and the awards made by local authorities, usually known as major awards The number of State scholarships which are awarded on the results of the examination for the Higher School Certificate was in 1947 increased from 360 to 750 a year in 1947, and has recently been again increased by another 100 In addition, up to 100 technical State scholarships, for students from establishments of further education, were offered for the first time in 1947, tenable at universities, university colleges, or establishments of further education. At the same time, important changes in the conditions of award and tenure were made. Previously, scholarships were tenable at any university or university college of the successful candidate's choice, but in 1947 it was decided that scholarships should be allocated among the universities and university colleges on the basis of one-sixth of the award, i.e. 125, to be tenable at each of the universities of Oxford, Cambridge, and London, and the rest to be divided among the remainder according to the number of full-time students at each. Candidates are asked to name at least five choices, in order of preference, and allocation is carried out as far as possible in accordance with their preferences.

The previous duration of a State scholarship was normally three years, with a maximum of four. Now, however, this maximum has

been abolished, and a scholarship is normally tenable for the duration of the holder's approved course of study. Further, the previous limit of value was payment of approved tuition fees and £100 a year for maintenance This limit also has been abolished, and a scholarship now provides the cost of approved tuition fees and the full standard figure for maintenance as agreed between the Ministry and the university, less an assessed contribution (if any) from the parent or guardian, and the value of any other awards held. Provision has also been made for an addition to the maintenance grant in the case of any necessary increase of attendance beyond the normal period in any academic year, for necessary study abroad and, if circumstances justify it, for vacations

A new departure was also made in 1947 with the establishment of twenty State scholarships for mature students, aged not less than 25, the value of the scholarship depending on the needs of the holder Awards are made by a committee which includes representatives of the universities, after a study of applications submitted and (usually) an interview with selected candidates Nineteen awards were made in 1947, the main subjects read being political philosophy, economics, and English

Arrangements were also made for the payment of a new form of assistance to university students, in the shape of university supplemental awards. These awards are payable by the Ministry to students who have won scholarships and exhibitions, of a value of at least £40 a year, awarded by universities, colleges of universities, and university colleges, the amount of the award being assessed as in the case of State scholarships; 789 such awards were offered in 1947.

Suitability for a major award, made by a local education authority, is judged by performance in the examination for the Higher School Certificate or in another of equivalent standard Authorities are urged not to exclude awards made on special grounds, as, for example, distinction or high promise in some direction not normally tested by such an examination, and to include in their schemes awards tenable at technical, commercial, and art colleges and colleges of music The value of a major award is generally comparable with that of a State scholarship. The total number of such awards made during the year 1946–7 was 7,662, at a cost of £629,000, or an average of about £82 each

Owing to the shortages of graduates caused by the war there is at present no difficulty in absorbing into suitable employment the output of the universities. Nor, so far as science graduates are concerned, does there seem any likelihood of difficulties arising in the near future. In 1946 the Committee on Scientific Manpower, commonly known as the Barlow Committee, expressed the view that the national interest demanded a doubling of the number of graduates in science and technology at the earliest possible moment.

This has been practically achieved, the numbers having risen from 11,865 in 1939 to 21,863 in 1947–8. A similar expansion in the number of arts students was envisaged, and this again is well on the way to being achieved, the numbers having risen from 17,879 in 1939 to 27,676 in 1947–8 Whereas, however, the estimates of the number of science graduates likely to be needed can be based on fairly reliable data obtained from the various technical personnel committees set up by the Minister, the estimation of the future demand for arts graduates is a much more difficult matter, and there are some grounds for fearing that the present numbers of arts students cannot be maintained or increased without the danger of creating unemployment, unless opportunities for their employment are greatly increased Before the war the teaching profession, the civil service, the legal profession, and the Church absorbed the major part of the output of arts graduates other occupations into which they could be absorbed with advantage to the country would appear to be local government, and non-technical employment in industry and commerce

In the preceding pages an attempt has been made to show what are the main factors influencing a child's ultimate choice of a career and the main ways in which they can operate In conclusion, some mention should be made of the possibilities which exist within occupations of advancement which, of course, may sometimes take place to a degree which results in a person's occupying a position which virtually constitutes a new occupation

In industry, from the days of the Mechanics' Institutes, vocational study by those in employment, but conducted outside working hours, has long been common, and has accounted for the major part of the enrolment of students in technical colleges and polytechnics Courses given during working hours are generally a more recent development, though periodic courses of instruction have for long been a feature of some occupations—notably, for example, the armed forces. More recent still is the recognition of the desirability of what might be described as "background" education· i.e. courses not specifically vocational, but designed to give the employed person a better understanding of his own work, its connections with other processes and parts of the same industry, and the industry of the country at large.

To-day, the ever-increasing complexity of technology, and the frequent modifications of processes, have made training within industry assume great importance in the life of the country. Three different types of training may be distinguished. Firstly, there is the non-vocational, such as that which it is planned to give in the county colleges and which is being given already in many part-time day-release classes Secondly, there is the initial training necessary to enable a new recruit to an industry to do his job in it or to instruct workpeople in new processes. This training may

vary from the informal "watch and pick it up" methods obtaining in small firms to the full-time courses, often lasting several weeks, arranged by big firms and by such organisations as the National Coal Board The latter, for example, provides for juvenile entrants to receive up to sixteen weeks' instruction, in mining and in general subjects, before entering a colliery. Thirdly, there is the training provided to fit an employee for a more responsible post. How this training is carried out varies with the nature of the post for which the employee is being trained and the resources of the firm or industry in which he is employed Thus, in the training of supervisors, smaller firms might call in a trainer from the Ministry of Labour and National Service, while a firm employing more than, say, five hundred workpeople would probably have its own trainer. Arrangements may be made for selected employees to attend courses at technical colleges or even universities the National Coal Board, for example, offers no less than one hundred university scholarships a year Some industries are important to the national economy but employ few personnel, so that the demand for facilities at the advanced level of training are small and do not call for special provision at more than one centre To meet such cases provision has been made for the establishment of National Colleges The National College of Horology and Instrument Technology and the National Foundry College were established in 1947, and steps have been taken for the establishment of colleges for heating, ventilating, refrigeration, and for engineering and the rubber industry

Under the Employment and Training Act, 1948, the Minister of Labour and National Service is empowered to provide for persons, whether employed or not, who are above the upper limit of the compulsory school age such training courses as he thinks necessary or expedient to assist them to fit themselves for, or obtain or retain employment suitable to, their age and capacities. The Minister has to consider the needs not only of the individual but also of the country, and so these powers to provide training courses are given him for the additional purpose of assisting employers to obtain suitable employees and generally for the purposes of promoting employment in accordance with the requirements of the community

Working through eleven regional offices, the Ministry of Labour and National Service maintains a comprehensive system of training schemes and employment services Mention has already been made of the Youth Employment Service For adults there are the employment exchanges, which, by a system of classification according to industry and occupation, seek to fit the right man or woman to the right job. In 1947 the 1,044 exchanges placed 3,008,152 men and women. When necessary, vacancies are advertised over a regional and often a national field

For more specialised appointments there is a service operating

through fourteen appointments offices situated in the larger towns and dealing with vacancies of an administrative, executive, or managerial character. A parallel service for scientists, technologists, professional engineers, architects, and surveyors is provided by the Technical and Scientific Register maintained centrally in London. Industrial rehabilitation courses are held for those who, after illness or injury, need some extra help after they have finished their medical treatment to get them fully fit and confident to return to work Where necessary, vocational guidance is given, and vocational training can be offered at the conclusion of the course Incidentally, all employers of twenty or more persons are required to employ a quota (at present 3 per cent) of disabled persons

It will thus be seen that, in recent years, there has been a great increase in the national provision for ensuring, firstly that boys and girls get the type of education best suited to their age, ability, and aptitude, secondly, that upon entering employment they go into work suitable for them; and thirdly, that when in employment they have every opportunity of advancement according to their ability It is not claimed that the provision is yet complete, or perfect in its working, but it may justly be said that now not only persons of outstanding ability—who despite all difficulties have always been likely to rise to high positions—but also those above-average but not outstanding can gain the education and the employment for which their abilities and aptitudes fit them, without being unduly hampered by their own or their parents' circumstances

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CHAPTER TWO

EDUCATION IN A CHANGING SOCIETY [1]

THOSE who have had occasion to use A F. Leach's well-known book of educational documents will remember how among the earliest of the pithy observations with which he introduced his transcripts there occurs the remark " In nothing, not even in religion, has the innate conservatism of the human race been more marked than in education " [2] Reading between the lines of that vigorous essay we can see that he was much exercised about the strength of education as an institutional expression of social purpose Still, as the quotation shows, it was never his belief that education could work as a *constructive* instrument in social change Nearly forty years have gone by, many things have been altered in our system of teaching And it is possible that we can approach with a new slant the question present in Leach's mind What is the role which education, regarded as a function of social change, occupies in the movements of the larger framework of the organised lives of men and women? The word *change* is important, only with the notion of a dynamic relationship [3] does the meaning become clear, though it must be freely admitted at the outset that in common estimation education has not been among the progressive forces Those whose concern it was in the past to resist innovations and maintain the validity of traditional beliefs made the fullest use of education as a conditioning instrument " Schools to-day," Mr William Gallacher said recently, in words that might have been taken over verbatim from Karl Marx and would have been truer in his day, " are used by the capitalist class to spread ideas favourable to their own survival " [4] The thought is, of course, true in some measure

[1] With some unimportant verbal changes this is the text of the author's inaugural lecture as Professor of the History of Education in the University of London delivered at King's College on 21 October 1949, with the Rt Hon R A Butler, M P , in the chair The lecture, which was given under the title of " Education and Social Dynamics ", opened with some references, here omitted, to the work in London University of the previous heads of King's College Education Department John William Adamson, John Dover Wilson, and Francis Alexander Cavenagh

[2] Arthur F Leach, *Educational Charters and Documents* (1911), p ix

[3] The author's indebtedness to Sir Fred Clarke will be apparent to anyone who is familiar with *Education and Social Change* and other recent writings

[4] W Gallacher, *The Case for Communism* (1949), p 111

of all established groups that have wielded power. And there are always such conserving elements at work, though not always on top—"the voices of society in equilibrium," as Mr G M Young has called them. Karl Mannheim used to teach that one of the endeavours of a governing *élite* must, in the nature of things, be to stifle ambitious ideas among the masses and to depress their intellectual level

Speculation about the ifs of history sometimes helps to clarify a tangled problem It is true that this pastime is felt to be unethical or at the best slightly improper among professional historians, but union rules do not absolutely condemn the practice, and it will be convenient to begin by proposing two questions, without attempting to answer them First, supposing that we take fully into account the industrial lead secured for Britain by the circumstances of the French revolutionary wars, what would have been the results of a decision in the year [1] of Waterloo to provide the country within the next ten years with a universal system of schooling to, say, the age of 12? How should we now be discussing those results in terms of political development, of economic expansion, of moral vitality, and of the structure of classes? There would have been great difficulties, of course, at the outset heavy social cost, higher labour costs for many years, the need for an adjustment of investment habits, and probably a phase of religious controversy of unprecedented fury But suppose the chance had been seized and that had come off. With what degree of satisfaction should we now be reading our social history from 1815 onwards?

Or again, suppose that the May Report presented to the British Government in 1931 had fallen flat, that the economic crisis had been handled not by Philip Snowden but by disciples of Maynard Keynes, on an expansionist instead of a restrictionist programme; that enlarged capital investment with no retrenchment of public spending out of income had been pushed on, on the principles later formulated by the 1944 White Paper on employment policy and economic reconstruction.[2] Where would Great Britain find itself now, with the whole school development and building programme implied in the recommendations of the Hadow Report an accomplished fact? What would now be the condition of communities living in the Gorbals, in Merseyside's Scotland Road, in Bermond-

[1] Only five years later Brougham did bring forward a Bill "for the better education of the poor", with provision for payment of maintenance charges of parochial schools out of local rates However, it was clear that the country would not look at a public scheme, and when in 1833 J A Roebuck had spoken to his resolution in the Commons for "the universal and national education of the whole people", with compulsory attendance between the ages of 6 and 12, he was compelled to withdraw it, for no Government would take the plunge.

[2] *Employment Policy* (1944), Cmd 6527.

sey, and in the square mile north-east of Shepherd's Bush? What would our statistics of juvenile delinquency be saying? Would there now be a shortage of prospective teachers and young scientific workers? And would some of us now be standing puzzled and dispirited at the sight of county educational building programmes slashed in half, whilst palaces for civil servants rise proudly on the vacant lots?

The belief that changes in the shape and content of education are capable of producing portentous results in the regrouping of social forces is a familiar one to most of us, though it is by no means acceptable to all We might, had we time, satisfy ourselves on this point by scrutinising such statements as that the development of folk high schools had an easily traceable effect on the outlook of Danish farmers and can be linked to the growth of the agrarian co-operative movement, can be linked, if you please, to our bacon ration, or that in Britain equality of rights for women proceeded from the fact that at a certain stage in our history girls received equal access with boys to a liberal education

Or the matter can be more conservatively stated, though in a less positive way, if we say that developments in the social order deemed by some bodies of opinion to be desirable may be held up or rendered impossible by neglect of an essential educational reform Without educational reconstruction the brave new post-war world can hardly be realised—that was the underlying belief of nearly every speech in the great two-day debate [1] in the summer of 1943 after the publication of Mr Butler's White Paper [2]

An even bolder approach to the matter was outlined by Mr. T S. Eliot during the war. The business of education, he has said, " is no longer the task of merely training individuals in and for a society, but also the much larger task of training a society itself—without our having any fundamental accepted principles on which to train it." " The scope of education "—and here he seems to point to a consideration of some importance which is seldom appreciated— " has been rapidly expanding as social organisms have broken down and been replaced by the mechanisation which increases, as it manipulates the atomisation of the individual " [3] Mr. Eliot's meaning is that the family and such older social institutions as the church, the chapel, and the workshop group have lost much of their formative influence over the young, and that State-provided services have stepped in to take over the task, but have deprived the work of certain human values in the process There is truth in this The

[1] *H C Debates, 1942–3*, Vol 391, cols 1825–1928, 1935–2047.
[2] *Educational Reconstruction* (1943), Cmd 6458.
[3] Supplement (No 20) to the *Christian News-Letter*, 13 March 1940, quoted H C. Dent, *Education in Transition*, p 174 If I read correctly the argument of *Notes towards the Definition of Culture* (1949), Mr Eliot has since retreated from this position.

hand that rocks the cradle has surrendered or been deprived of certain positive functions which the historians of educational forces have hitherto felt little call to study, though some powerful utterances have issued from Dr. John Dewey. The nineteenth-century mother of a large family—itself a significant social institution—had to provide out of her own cultural, emotional, and pecuniary resources a substantial part of the attention the young can now secure, in the form of moral training, nursing, and preparation for life, in schools, clinics, dispensaries, and quite a range of institutional forms, ending up with the juvenile employment service. Where she and her husband did well for their offspring, they left little or no written trace in history When, as too often happened, they made a mess of it, we find our ample documentation in criminal statistics, in factory and sanitary inspectors' reports, and the records of the numerous societies set up to awaken and at the same time to offer consolation to the Victorian conscience

Here, then, we note in passing an important structural change in society during the last two generations, demonstrated by the increasing control over the conditioning of youth taken by organisations Have they more, or less, sensitiveness than the older educative influences to the demands likely to be made in due course on the children passing through their hands? Should we not do well to try to study more scientifically the social consequences of exposure to the classroom, the hall of residence, the tutorial group, and the industrial environment of the juvenile worker, not forgetting the present darling of the reformers, the nursery school? The youth organisations are, as is generally known, already undergoing that kind of scrutiny, they stand almost alone in having been openly encouraged by the State as a means of giving closer integration and a stronger sense of purpose within society. They need all the study they can get.[1]

There is a converse to all this Education may be conceived of as the passive element in the social process, not entirely inert, of course, but responding to stimuli rather than producing them In this context we meet with a different arrangement of the elements in a chain of causation, and, whereas some observers would stoutly and I think rashly deny that education ever takes the lead in social development, you will not find anyone quarrelling with the assertion that when there has been a shake-up in the economic and social pattern, then, though not always at once, there are to be seen reactions on the educational plane.

Let us abandon generalities for a moment and consider the technical transformation of iron and steel production in the last cen-

[1] A formal handling of the methodological problems in the treatment of relations between school and society will be found in W B Brookover (of Michigan State College), "Sociology of Education. a Definition", *American Sociological Review*, June 1949.

tury The cultural history of Tees-side is especially interesting, for here, rather late in the day—in the expensively equipped heavy industries it is no great disadvantage to be late in the day—after the discovery by John Vaughan that the main seam of ironstone under the Cleveland Hills cropped out and could be exploited on the north face as well as the south, being that much nearer to the Durham coal-field, a large-scale industry with the latest equipment grew up overnight On the site of Middlesbrough there were in 1801 four farm-houses. The new communications opened up by the Stockton and Darlington Railway led to some slight urbanisation. Then in the 'fifties, the town grew up like a mushroom, much faster than the best possible rate of adaptation of the two national societies which were then entrusted by the public with most of the responsibility for the development of schools. Now furnace and foundry workers were a notoriously illiterate race Yet, though the work of an iron puddler was perhaps the hardest manual work in the country, it required skill of a crafty order, and the puddler took home good money. He and his mates in other sections, and their supervisors too, were excellent practical fellows, but they had not trained minds British technical advances had been of a crafty kind too—much good sense, here and there a bit of luck, and some fine examples of opportunity seized on the wing. They were empirical successes Educated foremen and technicians were then rare A Yorkshire capitalist, addressing the House of Commons, said that he had been obliged in 1858 to appoint as manager of a large ironworks a man who could neither read nor write,[1] a relative perhaps of the Lancashire schoolmistress of the period who was prosecuted by the factory inspector for giving currency to false school certificates among young mill-hands, and on production of evidence in court that she was unable to write, escaped conviction [2] German and French theoretical application caught the British ironmaster up, and in the Paris exhibition of 1867 we found ourselves outclassed. It was one of the first intimations of mortality registered in the mind of British industry.

I think one of the reasons why Tees-side ousted the west midlands from primacy in iron and steel, and why in fact it finally led the whole country, was that it began rather earlier than most areas to take education seriously, using it, so to speak, as a new dodge to improve production in a world of cut-throat competition. The founding of centres of higher (or post-elementary) instruction in Middlesbrough was undertaken by the industrialists. They wanted technicians and clerks of better quality than they could import from South Wales or the midlands and better than the

[1] D L Burn, *The Economic History of Steelmaking, 1867–1939* (1940), p. 12

[2] This true story was repeated by the Chief Inspector of Factories and Workshops in his *Report for 1932* (1933), p 15.

Yorkshire and Durham elementary schools could produce, so they made them on the spot by investing in education—that was from 1877 onwards The local authorities themselves might, under the Technical Instruction Act of 1889, have taken the matter up They did not, and in Middlesbrough post-primary education has been developed by industry quite openly for the promotion of business ends, and the local technical college, finally completed in 1929, has been named after a ship-owner [1]

It has seemed useful to choose this example, showing the interplay of economic and educational elements on a somewhat restricted stage, just because it illustrates the difficulty experienced by the social investigator, in the midst of his maze of data, in disentangling cause and effect, and in differentiating between ends and means Here one of the beginnings of post-primary and technical education surely stands revealed, representing what might be described as an anxious attempt on the part of one social institution to catch up with technological development in quite a different field The school has *followed* in the path of the salesman and the production engineer Yet in some sense there is social planning here The ironmasters were, after all, strong in local patriotism, they wanted not only better brains on their current production, but also men who would play a constructive part in the future of the industry, keeping it a step ahead of rival endeavours, they were also interested in the improvement of the cultural heritage of the district in which they had their works All this is incontestable It was a case of foresight But to call it typical of the age would be to overstate the case

A N Whitehead was one of the few recent thinkers on educational subjects to have noticed the strange reluctance of the Anglo-Saxons to think forward into the implications of their policies He speaks of the unbroken tradition back to the age of Plato of our sociological theories, our political economy, our doctrines of education.

> The whole of this tradition is warped by the vicious assumption that each generation will substantially live amid the conditions governing the lives of its fathers, and will transmit those conditions to mould with equal force the lives of its children We are living in the first period of human history for which this assumption is false [2]

Be that as it may, the changing social environment of the present century has exerted so intense a pressure upon educational outlooks and methods, and not least on national policy, that the effects can be guessed at if not actually seen

We live in an age of formidable stock-piling in knowledge and

[1] Ruth Glass (ed), *The Social Background of a Plan* [Middlesbrough] (1948), p 92

[2] A N Whitehead, *Adventures of Ideas* (1933), p 117

techniques If the purpose of education, as many suppose, is to transmit culture as a living thing, what does the teacher do when culture itself, like one of Lewis Carroll's wayward creatures, seems to be visibly altering its appearance and content beneath his gaze? What is the nature of the problem, novel within these last generations, caused by the enormous accumulation of useful knowledge? How effectively and with what conscious appreciation of their difficulty have the questions of synthesis, selection, and simplification been faced? To take only one aspect of all this, how have teaching methods—that is to say, methods in action and not the theory behind them—been affected by the growth of a whole range of new technical and specialised vocabularies, each proper to a rapidly developing subject?

Again, take the increased expectation of life which has upset the previous balance of the age-groups. What has been the effect of this on the transmission process? The majority, to be sure, have now a much longer period of preparation for adult life in the schools. But, taking into account the prolongation of that adult life, have we really increased the share taken by the schoolroom out of our total span? Surely quite the opposite has been the case Ought we to expect the lengthening of life, the growing preponderance in our midst of older people, to assist the transmission of cultural values, helping us to distinguish the present truth from the eternally false? Or do the older members of our society, each bearing his or her heavy little parcel of archaic traditions, actually retard the forces of change by attempting to maintain culture patterns which are outmoded? Since, as Sir Godfrey Thomson has shown, it is in those families in which the intelligence tends to be below the average that the overlap of the generations is greater, the investigator might come to some interesting conclusions

It would be tedious to try to present anything like a complete catalogue of influences exerted through social change in our recent civilisation. Three have already been noticed the ramification of welfare services; the growing heritage of practical knowledge (i e the application of the "know-hows"), the longer overlap of the generations. We might consider as a fourth the effect of changes in the relative size of occupational groups (e g the great expansion of opportunity in this country in the white-collar pursuits), bearing in mind that an individual's opportunities for social learning are limited by the strong pressures brought to bear from groups above and below him to restrict his participation to the skills and attitudes of the group to which he belongs, i.e. to keep him in his social place [1] We might consider as a fifth question whether the rigidities in society, the monopolies and the restrictive practices

[1] Allison Davis, *Social Class Influences upon Learning* (Inglis Lecture, 1948 (1949), brings out the importance of this consideration

which hinder economic mobility in the horizontal sense, have a sedative effect in the educational world, whether the school in these circumstances maintains a bias in favour of preparing for the safe and certain job,[1] and how that affects the public weal in its turn The implications of a policy of full employment come startlingly into view at this point Conversely, one may ask, how far is educational policy itself able to break down tendencies to immobility and to promote the spirit of enterprise? Surely that is a very important question.

A sixth consideration which demands rather more attention relates to the effects of technological change on education. Whether in the spread of technical instruction we are faced with the most significant product of such change, as the above example from Cleveland heavy industry might almost seem to suggest, is open to question More work has perhaps to be done on the historical data before an answer can be given This at any rate seems to emerge from a study of the history of school curricula, that, if the pedagogue is compelled to follow the scent of scientific progress, which of course he has always done in a fashion, he is apt none the less to come snuffling along when the scent is pretty cold This raises the fascinating problem of the causes of the time-lag in educational adjustment, which needs study in all its aspects Important as it is, it must be left aside in the present paper

Now, when an advance in applied science or a change in export markets or the habits of saving gives a jolt to the structure of industry and to the way in which the community's work is performed, maybe to the essential shape of society itself, we know we ought to look for some consequential change in the way in which the oncoming citizen is trained for action, even if the response is hardly prompt Yet the connection between specific economic events and the frame and content of education is admittedly a somewhat tenuous one. Add to this consideration another one, viz that educationists are by nature very shy, very properly shy, of vocational demands for specialised training, and it can be appreciated that we are concerned on this level of relationships with adjustments of a long-term nature and of a very broad type. The earlier industrial developments of the last two centuries did not, as one might perhaps have expected, set in train a movement for trade schools to turn out skilled workers for the machines. The idea of the industrial school for the manufacture of nimble little weavers and mechanics was, it must be admitted, prevalent from the time of Locke onwards, but somehow it never got popular support or came to much. The fallacious belief which holds that the advance of mechanisation and the division of processes call for longer and

[1] W L L Warner and others, *Who Shall be Educated?* (1943), pp 148–50

more elaborate industrial or other vocational training has never been fully accepted outside the ranks of the skilled trade unions and the professional associations We finally learned to recognise it for what it was during the production drive of the Second World War when trying to dilute the labour in sheet-metal shops, on capstan and automatic lathes, and so on. Workers could be trained with a high degree of skill within a limited range at little cost of time and indeed with the greatest of ease The greatest success story on manpower side in both the American and the British forces tells of the speed with which personnel of both sexes could be trained for the most intricate operations in the management of highly mechanical and electronic devices The essential prerequisites were adaptability and a good general education, including if possible some years of secondary schooling Actually, one of the first effects of the Industrial Revolution was the widespread abandonment of the tradition of indentured apprenticeship That proved in the long run to be a very serious social loss, but it was quite in accord with the temper of the age

We might glance for a moment at the growth of popular education in the nineteenth century What the new conditions seemed to require, if we take the moral side first, was a spirit of docility in the face of current employment conditions, secured in part by a form of religious teaching in which Bible-reading played a large role That meant literacy

"It should be borne in mind," Mr William Williams told the House of Commons in 1846 after the Rebecca riots, that "an ill-educated and undisciplined population, like that existing among the mines in South Wales, is one that may be found most dangerous to the neighbourhood in which it dwells, and that a band of efficient schoolmasters is kept up at much less expense than a body of police or soldiery." [1]

On the practical side the employment conditions of the masses were such as to demand capacity to read invoices and simple instructions. Until the late 1880's the teaching of the three R's, generously laced with moral exhortation, under a system which Professor Tawney has described as "a discipline half-redemptive, half repressive",[2] seemed to all but the visionaries a satisfactory enough requirement for the equipment of the working-class boy and girl The difficulty for a long while was to make even this modest level of instruction universal, or to give more than a year or two of it to each child, a difficulty exacerbated by the unique religious inheritance of this country, which would never allow a reasonably free hand either to the secular or to the religious embodiment of

[1] *Education in Wales, 1847–1947* (H M S O , 1948), p 5

[2] R H Tawney, *Some Thoughts on the Economics of Public Education (Hobhouse Memorial Lecture), (1938), p. 17.*

the dominant social wills, and has kept them locked together for long periods, motionless in a hard-breathing clinch.

The grand objective of universal schooling was reached by two main stages the first in the Act of 1870 after a number of desperate endeavours by practical administrative reformers, like the factory inspectors, to shield the young from the effects of industrialism, to protect them from being sucked in too early by the machine in the form of cheap labour—in a word, to keep them out of the mines and factories. It was as much the result of these endeavours to cut the children out of the labour market by boxing them up in school, so as to make sure that industrial legislation was obeyed, as of the frontal attack on inertia and vested interest by politicians and moral reformers, that the bastion of 1870 was reached and secured And this victory, as we know, meant a wide extension of a *general* education of a not very high order up to Standard IV The Board schools of 1870 were not the first State essays in provided education. There had been some strange scholastic enclaves among the fluff and grease of the cotton mills under the Factory Acts, and a number of rather grim little teaching establishments had been carried on unobtrusively under the supervision of the Home Office and the Poor Law Commission.[1] In fact the Board schools inherited an unwholesome past in the way of public provision The marvel is not that the elementary schools of England and Wales in the last decades of the nineteenth century were in many ways so dreadful, but that they were able in the face of adverse traditions, and under the unimaginative controls imposed by the old Revised Code, to make good at all, and to conquer that wide expanse of territory which has been discovered and charted in Mr Lowndes's well-known and important study *The Silent Social Revolution*,[2] which may be commended to anyone who would like to be convinced of the role of education as a positive force in social change

The next step, in 1891, carried victory up to the gates of the citadel with the measure which made popular education free, or at any rate free in most districts We are apt to overlook the importance of this landmark in the history of the working-class budget Two or three pence a week per head in fees, with some addition for books and winter firing, seems a negligible sum to us—the price of a cigarette None the less, a workman living in the wage-census year 1886 was, if his earnings fell in the median group,[3] getting

[1] Later the Poor Law Board There were large numbers of workhouse schools Graham Balfour (*The Educational System of Great Britain and Ireland*—see sections I, A, 1 and 2) speaks of seven hundred in 1846 See also S and B Webb, *English Poor Law History*, Part II, Chap iv

[2] 1937

[3] A L Bowley, *Wages and Income in the United Kingdom since 1860* (1937), Chap. iii

24*s.* 2*d.* Four children at school might cost him in fees 1*s*, or 4 per cent. of his income while in regular employment Let us not forget that he lived on the margin of subsistence. The education of his family was then making as big a proportionate claim on his income as did the education of their children in private day schools on the budget of the middle-income groups in the 1930's. Thus the Elementary Education Act of 1891 was as important in its way to the construction of the educational ladder as the more famous Balfour Act of 1902, for it did ensure that the child did not fall off the lowest rung before getting a proper footing.

But the national educational code of the 1890's did not provide for more than a trace of free technical instruction, nor, in spite of the recommendations of the Bryce Commission that vocational education must be recognised as part of the province of State secondary schooling,[1] did the Balfour Act itself. The provisions of that great though inconsistent measure laid for good or ill the broad foundations of our present culture in England, with its strong vein of lower-middle-class values And of course it must be realised, in explanation of some of its oddities, that the Act was very much the work of one man, of whom it has been said that here was a civil servant whose experience of the dynastic and religious feuds of Siam, while a tutor in Bangkok, equipped him, as perhaps no one else of his generation was equipped, to understand the Anglican and nonconformist minds.[2] So much was it the work of this official, that one can never decide how much of the Act bears the imprint of the *Zeitgeist* and how much perpetuated Sir Robert Morant's own prejudices—for example, his predilection in favour of making the new municipal high schools reflect as strongly as possible the public-school humanist spirit. In some cases the technical schools belonging to local education authorities were actually re-named as high schools under the counties' administration of the Act And so, when the history of technical education comes to be written, though we shall discover a fine record of experiments at the higher ranges of specialised teaching in some areas, notably in London, it will be found to be true that for one reason or another the English have so far not been able at any time to bring a strong technical element into public education at the secondary level. To take the engineering groups of industrial requirements as the most useful example, it seems that the unquestionable superiority of works training over school training in the technical subjects, if we consider the former in the light of the best models as with Ford's at Dagenham and the United Steel Company in Sheffield, and the latter in the light of general experience up to date, is due to the fact that in the

[1] For treatments of this vexed question see H C Dent, *Secondary Education for All* (1949), Chap. II, and S R Humby and E J F James, *Science and Education*, Chap II

[2] K. B. Smellie, *A Hundred Years of English Government* (1937), p 92

factory school one learns how to work in the social as well as the technical environment of an industrial plant, while in the junior or the more advanced technical school one's industrial training is limited to the handling of certain tools and techniques This consideration might also cause us to hesitate before coming down too heavily on the side of county colleges if they are to be regarded as rivals to the development of works continuation schools in the industrialised areas. The demand for more production per head through increased efficiency and such things as lower absenteeism, factors which may form Britain's only passport to survival as a world power, is to be met, according to advanced opinion in industrial sociology such as that of Elton Mayo, the younger Whitehead, and Sargant Florence, by methods other than the use of the self-defeating manipulation of wage incentives It is now being convincingly argued that the secret of improvement lies in the restoration of human relations in industry, not only between management and workers—that is a truism—but within each small group of workers engaged in contiguous operations. Which agrees with the conclusion that vocational guidance is more important than vocational training, and that acquired ability to engage happily and creatively in co-operative teamwork is of more value than school-conferred expertise. This is the constructive job which the secondary modern schools are asked to tackle It sounds platitudinous, of course, in the summary way in which it has just been expressed, but it will demand the earnest co-operation of sociologists, psychologists, and economists, and it will tax all the resources of the educationists Indeed, one of the main tasks facing the new area training organisations set up under the McNair Report is a thorough analysis of this problem as it affects the training of teachers, and we have yet to think out its implications.

The conditioning of education by technological factors has been real, but nearly always indirect, working through the mediation of other kinds of social relationship Of course, one can easily find instances of direct action, in the interests of real or imagined State requirements The Soviet Government, to quote an extreme example, tried to achieve that part of the first five-year plan which demanded transformation of industrial manpower by converting all secondary schools into technical schools, i.e. into Government training centres for skilled workers, and even by abolishing the non-technical work of the universities. One of the results of this was that the higher technical institutions found their intake restricted to technicians of very limited outlook in place of potential engineers with an all-round education.[1] The policy was soon abandoned in a mood of penitence, and the full swing in the other

[1] N Hans, "Recent Trends in Soviet Education," *Annals of American Academy of Political and Social Science,* Vol. 263 (May 1949), p. 115.

direction can be seen in Russia in the subsequent introduction of teaching in the humanities in the higher technical institutes themselves We have no example of such remarkable interference by the State in the British record, although the very adequate response made with the use of public funds to the invitation of the Barlow Report [1] to double our university output of scientists, in order to meet an estimated national demand, furnishes interesting material for comparison.

The foregoing treatment of the links between educational change and social movement has been concerned in the main with the economic aspects of change One or two of the broader social issues have been mentioned in passing, but we have barely touched upon the important questions of class structure and group loyalties and social defence mechanisms Willy-nilly, any study of modern society must come down to class stratification at last. We have in the end to get out our Pareto, our Max Weber, and our Durkheim and give thought to the circulation of the *élite,* study the motivation and working of interested pressure-groups (such as those which have from time to time tried to control public instruction in Chicago and other American cities,[2] and perhaps from time to time, with less obvious interference with teachers' rights, in the County of London too), consider the essential differences which distinguish a culture widely shared and broadly based (such as that towards which we in Britain are now apparently working) and a culture narrowly guarded by a self-conscious minority And so on

Can a society by making timely adjustments to the pedagogic pattern, to the development scheme of its universities and schools, to curricula and to financial aids, bring its educational apparatus and current bias into accord with the estimated needs of the future, and then achieve delivery of the product? Assuming a reasonably high degree of precision in forecasting some specific needs, it can reasonably be maintained that it can and should so plan, e.g. in looking to the size of the medical services. Thus, in respect of foreseeable developments in the learned professions, calling for allocations of equipment and specialised teachers, we can accept as one of the duties of the educational planner the obligation to study prospects and to arrange for a rate of production, remembering, however, that there will always be critics who will warn against excessive output, in other words providing the higher forms of education beyond the limits of potential demand, leading as this may to the inflation of the pool of capacity to a level where the earning power of a whole occupational group may be depressed, and a dissatisfied body of learned unemployed come into being unfitted by training and ambition for tougher and less well-remunerated careers.

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[1] *Scientific Manpower* (H M S O , 1946), Cmd 6824

[2] F S Chapin, *Contemporary American Institutions,* pp. 169 ff.

The question whether educational policy is concerned to play a part in the general business of manpower budgeting for the recruitment of jobs at large, and of how far prevision is required, is another matter. Certainly it needs more thought than it is now receiving among the administrators in Whitehall and Edinburgh. But we have already considered reasons, based on historical considerations, for not giving too much weight to this requirement

There is, however, a related and by no means negligible aspect of the matter which may demand keener attention The correspondence columns of the English press have lately been giving room to what may be termed the Schuster Dilemma—the problem which Sir George Schuster has been vigorously canvassing,[1] namely, whether the universal provision of a liberal education of a general type hitherto regarded as a preparation of entrants to non-manual employment can be rapidly accomplished without (*a*) debasing the quality of the teaching, and (*b*) aiding and abetting a widespread desire among school leavers to avoid manual work Now, whether the dilemma really exists in this form is a matter of opinion; but the time is surely ripe for a re-examination of our ideas about equality of opportunity through education. Nothing within the context of social mobility could raise such tremendous issues of principle Equality, one may ask, for what? For untrammelled access to the professions is what the thought conveys to many, perhaps to most people—education as the road to social advancement and the best jobs A scrimmage for a front place, an anxious squeeze through the golden gate, and entry into paradise! But what of those whose hopes are dashed? Equality of opportunity needs defining in relation to all socially useful work, and those who use the expression ought to have some sort of coherent picture of the society which will give that equality meaning

The familiar *Economic Survey* from the Stationery Office, now an annual event, is not yet matched by a study of significant social trends Which of us would not wish to sit as a spectator through the meetings of the drafting committee preparing such a report? But is a document of this nature even conceivable? There appears to be no clear or conscious agreement among the generality on desirable developments. This being so, our educational community has the rather doubtful privilege of being able to look *inward* for such inspiration as it can find to a degree which was denied to its counterpart[2] in Hitler's Third Reich, where apologists like Ernst

[1] See e g *Journal of Education*, March and May 1949

[2] " If at first a revolution can only be guaranteed by force, by means of education it can in ten years be founded on conviction, and in twenty years it will have become an unconscious tradition It follows that a democratic method of education is the only guarantee of a democratic revolution—indeed, to introduce a democratic method of education is the only necessary revolution "—Herbert Read, *Education through Art* (1944), p. 297.

Krieck were well aware of the social ends of State education and had only to philosophise about the means, in the somewhat elastic terms to the use of which educationists are prone [1], or in the U.S.S.R., where education has been enlarged and transformed to an extent hardly realised in England, and where the mind and outlook of each new wave of citizens are being moulded by a careful "synthesis of Soviet patriotism and Marxian doctrine", a process euphemistically described in official handbooks as "character-formation", though it seems to some observers to give the spirit of independence and criticism little chance to develop.

Yet even with us, in our old-fashioned world where doctrinaire shibboleths count for less than elsewhere, it is the coming shape of the social order which is in question. Anyone who listens in these days to a discussion on educational policy in Britain finds two assumptions commonly held. There are probably more, but these two seem definite. One is that a lot more social equality is desirable. The other is that, since the instruments are available in the educational field equally for building and dissolving class barriers, they should accordingly be put to full use.[2] We could hardly look for a more definite expression of the view that education is a function of social change with a constructive part to play.

Few men are able to perceive clearly the features of the classless society towards which we may be moving. We have no advance information about its standards, its scale of values, the forces which will maintain or threaten its equilibrium. But if the signposts have been correctly read, it seems most plain that all the prime attitudes are likely to be formed within the oncoming citizen's years of immaturity, and that they will have to spring from a keener awareness and delight in the individual's own developing capacities as a political animal, and, together with those, a much deeper sense of his social responsibility than our system seems to be able to bring out to-day. There is no registered patent by way of a remedy. The specific is not in more teaching of "civics", a subject which to be sure drops reliable hints about the gasworks and the way in which to become an effective ward politician, and must remain an important part of a secondary curriculum because of the facts it conveys and the interests it stimulates. What we look for is the more thoughtful shaping of the whole educational process, not

[1] "Seldom if ever does a discussion about education proceed in a medium of clearly defined terms, used in an agreed sense by all the participants, seldom if ever does it escape contamination and distortion by the intrusion of some sectional prejudice or vested interest which usually knows how to disguise itself in a speciously attractive colouring"—F Clarke, *The Study of Education in England* (1942), p 11

[2] From this point of view it seems clear that the real burden of the case against the retention of expensive independent schools is not that in the nature of things they recognise class distinctions, but that they are active in creating them.

forgetting the other side of the medal, which is very much our concern in a university school of education, that in the words of one of my colleagues—and I am very happy to give the last word to Professor Lester Smith, who has pondered sagely on these matters—"it is upon the creative work of imaginative teachers . . . that a free country must rely for the impact of education upon society" [1]

A V JUDGES.

[1] W O Lester Smith, *The Impact of Education on Society* (Joseph Payne Lectures, 1948), Blackwell, 1949

CHAPTER THREE

THE ENGLISH UNIVERSITIES

I. The Vocational Aspects of University Education

Education and Work

LIVING means much more than working, and education, which aims at making life better, must be more than training for work It aims also at developing the capacities of people so that they may enjoy life more, and at enabling people to co-operate in making work productive and life more enjoyable Hence university education has wider purposes than training for work. Although this article, in conformity with the plan of the YEAR BOOK, is mainly about the role of universities in relation to work, it is not implied that vocational education is the only or the chief end of universities

Nevertheless, the preparation of students for work is one important aspect of university education Throughout their history, universities have educated students to serve Church and State and the professions by their work, as the antiquity of the Faculties of Theology, Law, and Medicine shows.

The New Students

The vocational aspect of British university education has, however, become increasingly prominent as this century has gone on. There are a number of reasons for this. The chief one, perhaps, is the change in the character of the students They no longer come in the main from families which can promise them economic security Most students now come from families in the lower and middle income groups and are looking to education as a means of bettering themselves economically. This widening of the catchment area of the universities has been going on ever since 1902, when the Education Act established a public system of secondary education in England and Wales It has gone on at a pace accelerated by both the great wars, particularly the second one. It has been made possible by the increasing provision of financial assistance to students from public funds, in the shape of scholarships, exhibitions, bursaries, and grants for tuition and maintenance. The following table from the Report of the University Grants Committee (9) clearly illustrates the present situation.

TABLE I

ASSISTED STUDENTS, 1946–7

	Total Number of Full-time Students			*Assisted Students*			*Percentage of Col (6) to Col (3)*
	Men (1)	*Women* (2)	*Total* (3)	*Men* (4)	*Women* (5)	*Total* (6)	
England							
Oxford and Cambridge Universities	11,699	1,794	13,493	9,903	1,172	11,075	82 1
London University, excluding Medical Schools	5,991	4,310	10,301	4,338	2,223	6,561	63 7
London University, Medical Schools	4,392	706	5,098	1,382	246	1,628	31 9
Provincial Universities and five independent University Colleges	15,710	6,631	22,341	11,397	4,156	15,553	69 6
Total England	37,792	13,441	51,233	27,020	7,797	34,817	68 0
Wales	2,899	1,206	4,105	2,316	803	3,119	76 0
Scotland	9,073	4,041	13,114	6,739	1,777	8,516	64 9
GRAND TOTAL	49,764	18,688	68,452	36,075	10,377	46,452	67 9

Note —" Assisted students " means those who are in receipt of assistance from Government Departments, Local Authorities, Universities, or any other bodies which meet either wholly or in part university fees and maintenance charges It includes students in receipt of aid under the Government scheme for the further education and training of those who have served in the Forces or in other forms of national service

The percentage in 1935–6 corresponding to 67 9 in the above table was 41 1.

Passports to Jobs

The rising tide of poorer students has considerably altered the landmarks of university education. However interested the students may have been in the things of the mind, they have had to think of the work they would do when they left the university. Partly this meant they wanted courses which prepared directly for work, like degree courses in science or engineering. But even if the course of studies had no such direct vocational orientation, the student with an eye for market values wanted a specialised course " Every (university) appointments board secretary is plagued by the student who wants to know what degree course he should read in order to get a good job, or what particular subjects he should read in a degree course for this purpose " (1). These students " educate themselves like a burglar preparing for a safe robbery

by acquiring sharp and powerful tools to crack the bank of opportunity" (10). This widespread demand for the most directly vocational courses and the most specialised courses has confronted the universities with one of their most serious problems. The students whose cultural opportunities at home have been most limited are the very ones who have felt most impelled towards the most technical and most specialised degrees. The incentive to general education has been weakest to those who most needed it.

The Demand for Graduates

A student seeking to secure his own economic future could, however, at the same time satisfy any questioning by his social conscience which he may have felt, by reflecting that society seemed desperately anxious to have highly trained specialists of a variety of types. The very advancement of knowledge makes specialisation more inescapable The technical complexity of so much work demands it. The extremely rapid technological advances made in some directions during the late war opened up possibilities of exploitation for peace-time purposes, and have impressed people generally with the utility of science and technology. During the war, students leaving school with qualifications in mathematics and science were encouraged and enabled by means of State bursaries to follow short intensive courses on such subjects as radar and electrical and mechanical engineering at the universities as a preparation for service in the armed forces The student of today finds a clamorous demand for scientists, engineers, doctors, dentists, teachers, statisticians, and so on. A series of weighty reports has surveyed the demand for graduates with various qualifications and urged measures to ensure the supply. These reports, the work of committees set up by Government departments, professional associations, and other bodies, have dealt in this way with recruitment, training, and employment for medicine, dentistry, veterinary surgery, nursing, teaching, science, technology, agriculture, architecture, economics, social science, and other occupations. The advertisement columns of the Press are full of appeals backed by financial inducements. A student may well feel that it is good for society as well as for himself if he thinks of his university education as primarily a preparation for work

The Vocational Value of General Education

We have seen that students are seeking specialised education when they also need general education. Yet the employers of university graduates, even when they want graduates with a specialised education, often lay much stress, at least verbally, on general education—on the all-round training in ability to think which the

university is regarded as conferring. For posts of a scientific or technical kind, employers naturally look to the degree to certify scientific or technical competence, but for administrative and executive posts they care little what subjects have been studied. An experienced appointments board secretary concludes that the qualities employers look for in a graduate are these he must be intelligent, alert, and keen, he must have a trained intelligence, he must be good-mannered. He must be ready to learn; he must be able to speak and write the English language (1). If a general education produces these characteristics in men it has vocational value. Industry shows an increasing readiness to recruit arts graduates and train them for management

Careers for Women Graduates

Women whose degrees have no direct vocational bearing find it more necessary than men do to supplement general education with a vocational training. The woman graduate in science or medicine is at once in demand, but not the woman graduate in arts. A diminishing number of schools will employ women graduates as teachers without training, particularly if they are graduates of the older universities, but graduates are increasingly reluctant to become teachers because of their unfavourable position in relation to non-graduate teachers and to graduates in other kinds of employment. Industry, which is increasingly employing arts men, seldom offers women equivalent opportunities. From the employers' point of view, it is too risky to undertake the training of women in industry when the chances are they will marry and leave The Civil Service will take this risk, but it can employ only a small number of graduates. Local government in the main recruits at the age of 16, though it will find it increasingly difficult to maintain this policy as post-secondary education increases.

Many graduate women, therefore, find it expedient to take some kind of training course. A year's professional training for teaching is the course most frequently followed. Many women are now training for useful and interesting social work as hospital almoners, probation officers, children's officers, house property managers, and the like The cost of a year's training for a social science diploma, followed perhaps by a year's course of more specialised study, plus the postponement of earning, places such training beyond the reach of many. A short course of training for secretarial work is less expensive and leads easily to employment, but it is probably wasteful to use highly educated women for such work.

For both men and women more financial provision will have to be made for post-graduate courses of training for work besides teaching.

TABLE II

TOTAL NUMBER OF FULL-TIME STUDENTS ARRANGED UNDER FACULTIES

Academic Year, 1938–9 [1]

	Arts, including Theology, Fine Art, Law, Music, Commerce, Economics, and Education			*Pure Science*			*Medicine, including Dentistry*		
	Men	*Women*	*Total*	*Men*	*Women*	*Total*	*Men*	*Women*	*Total*
England	11,033	5,291	16,324	4,614	1,447	6,061	8,831	1,329	10,16
Wales	1,069	486	1,555	431	127	558	214	94	30
Scotland	2,834	1,799	4,633	864	284	1,148	2,578	590	3,16
Great Britain	14,936	7,576	22,512	5,909	1,858	7,767	11,623	2,013	13,63

Autumn Term, 1948 [2]

England	18,953	8,678	27,631	9,597	2,421	12,018	9,607	2,284	11,89
Wales	1,733	806	2,539	1,133	255	1,388	233	91	32
Scotland	4,201	2,548	6,749	1,740	465	2,205	3,405	1,027	4,43
Great Britain	24,887	12,032	36,919	12,470	3,141	15,611	13,245	3,402	16,64

Academic Year, 1938–9

	Technology, including Engineering Applied Chemistry, Mining, Metallurgy, Architecture, etc			*Agriculture, including Forestry, Horticulture, and Dairy-work*			*Grand Totals*		
	Men	*Women*	*Total*	*Men*	*Women*	*Total*	*Men*	*Women*	*Total*
England	4,140	77	4,217	574	97	671	29,192	8,241	37,433
Wales	183	—	183	144	31	175	2,041	738	2,779
Scotland	876	12	888	172	25	197	7,324	2,710	10,034
Great Britain	5,199	89	5,288	890	153	1,043	38,557	11,689	50,246

Autumn Term, 1498

England	7,425	208	7,633	1,482	280	1,762	47,064	13,871	60,935
Wales	440	1	441	386	48	434	3,925	1,201	5,126
Scotland	2,443	53	2,496	530	34	564	12,319	4,127	16,446
Great Britain	10,308	262	10,570	2,398	362	2,760	63,308	19,199	82,507

[1] *Report of the University Grants Committee*, op cit, *p* 104
[2] *Data supplied by the University Grants Committee*

The Courses Followed

The effects of the social changes to which we have referred—the influx of students from poorer and less cultured environments, aided financially in their quest for vocational education and stimulated by the rewards and status offered—may be discerned in Table II. The numbers of full-time students in various Faculties in the British universities are given for the last pre-war year and for the autumn term, 1948

The numbers in Table II include both undergraduate and post-graduate students (6). The latter include advanced or research students and students working for diplomas, including diplomas in education and social science Diploma courses, in particular, tend to have a definite vocational purpose. The number and percentage of undergraduate and post-graduate students at universities in Great Britain in the last pre-war year are given in Table III

TABLE III

UNDERGRADUATE AND POST-GRADUATE

FULL-TIME UNIVERSITY STUDENTS, GREAT BRITAIN, 1945–6

First Degree	*Diploma*	*Advanced*[1]
82 5 per cent	12 3 per cent	5 2 per cent

[1] *Higher degree, higher diploma, and research*

Government Aid for the Supply of Graduates

The estimates of the demand for graduates in various kinds of employment, in the series of reports to which reference has been made, forecast a demand for about eighty thousand university students in training as compared with a pre-war fifty thousand. Table II shows that already by 1948 the universities had more than met this demand. The quick increase from the pre-war fifty thousand to the post-war eighty thousand was, of course, partly due to the accumulation of ex-service students who would have passed through the universities earlier but for the war. The universities could not have satisfied the demand, however, if they had not had sufficient material resources. These were provided mainly by greatly increased Treasury grants, and it is evident that these grants were given largely with the object of increasing the supply of entrants to occupations Some of the grants were indeed earmarked for particular not general university purposes, namely, the grants for medicine and dentistry, agriculture and veterinary science, social studies, Oriental, African, and Slavonic studies, institutes of education, and certain work in science and technology. The ear-

marking of grants restricts the universities' freedom of action, and is for that reason regarded as a temporary expedient. It was undoubtedly national considerations of occupational distribution which prompted this expedient, and the universities will as soon as possible wish to be free again to determine their educational policies without having vocational training especially weighted by financial backing. As we said at the beginning of this article, the British idea of a university makes it more than a technical college, though training for work is one important product of university education.

The Demand for Status

The problem of the extent to which they should undertake vocational education is one which perennially confronts universities. British universities have never adopted the attitude of Thomas Jefferson that a university should be "an institution in which every branch of knowledge useful at this day is taught in its highest degree" The multifarious variety of vocational courses in American colleges and universities could not be matched in our universities Yet, as we have seen, universities including our own have always prepared students for occupations, and if medicine, law, and the Church are the most ancient and honourable professions thus recognised by the universities, we nowadays have chairs connected with such useful arts as brewing, cloth-making, and dentistry. It would therefore be impossible to hold that British universities are concerned only with the useless, the unpractical, or the theoretical Yet it is probably true to say that many people in universities feel that the university should be selective in undertaking vocational training even at professional or semi-professional levels. People in many occupations nowadays want their entrants to be trained at universities. They feel the importance of their calling and the exacting demands it makes on intelligence and ability, and they desire the status which association with the universities is rightly felt to confer. Hence accountants, nurses, speech therapists, and a great variety of others would like the universities to provide courses leading to their degrees, diplomas, or certificates. There is a widespread desire to secure the status which a university is felt to be capable of conferring, though there is not always an equally strong willingness to submit to the exacting standards on which, rather than on tradition or outward trappings, status can alone be based. A university qualification may be sought even while the university is criticised for being academic, that is, for being a university. Typical attitudes, which would form an illuminating sociological study, may be observed, for example, in the divided opinions of the committees on the training of teachers and on higher technological education.

The Proper Study of a University

How is a university to decide which types of vocational studies it will undertake? In view of the variety of practices, it would be impossible to state any clear-cut principles underlying the decisions of the universities It is probably true, however, that in general a vocation, to be considered worthy of university study, must be felt to depend for its practice on a coherent body of theory which is capable of progressive development in the light of new knowledge and interpretations Any kind of work which is mainly repetitive, mechanical, rule-of-thumb, incapable of abstract formulations which can be checked and modified by their relations to other disciplines, would be a kind of work less easy to justify as the basis of undergraduate study. It is still vaguely felt that the initial degree course should be justifiable as providing in some sense a general as distinct from a purely specialist vocational education, and that the vocational studies should depend for their theoretical validity on such fundamental studies as history or philosophy, or the basic physical or biological sciences. Post-graduate studies, it is accepted, may be much more specialised and definitely vocational. These statements are vague, but the criteria which universities employ in admitting or rejecting studies are necessarily difficult to define precisely It is perhaps some such criteria as these which make it possible to some extent to arrange subjects in a rough order of academic status, so that philosophy, classics, and mathematics, physics and chemistry, have an unquestioned claim, while such subjects as geography, economics, and psychology have been admitted with some reluctance, and nursing, watchmaking, and bookkeeping are either excluded or admitted with a certain repugnance

It would be easy to show the inconsistency of such attitudes, and merely to blame the universities for being narrow-minded, highbrow, snobbish, or (what has become almost a term of abuse) academic, and to contrast the selectiveness of British universities with the broad welcome given to all kinds of vocational courses in America Yet the same vague but stubborn feeling that not all respectable occupations provide a sufficient basis for university study seems to have survived vigorously in the United States also. We may attribute to this attitude the deep and widespread interest in the problems of general education, of which the Harvard report, *General Education in a Free Society,* is the best-known symptom. The same attitude may be discerned in the common practice of requiring the completion of a college course leading to a bachelor of arts degree before admission to a post-graduate professional school in law, medicine, or business.

II. University Education as a System of Selection

Any educational system is of necessity a system of selection, an elaborate and prolonged process of screening whereby individuals are sorted into different positions in the social and economic structure The functioning of this structure requires that different people do different things. People are not interchangeable units. The matching of people with jobs goes on after people leave school for work, but schooling is part of the same process. The capacity children show for learning at school provides some evidence of the capacity they will show for learning to do a job, and what they learn fits them to some extent for some kinds of work and not for others Educational guidance, vocational guidance, and vocational selection merge into one another.

The working of the educational system as a system of selection was discussed by Plato in the *Republic* He deals explicitly with the education and selection of the guardians of his state, but by inference others shared in the early education provided for the guardians and were eligible for selection Selection was to be made on the grounds of educational progress and of performance in specially designed situations. "We shall have to watch them from earliest childhood and set them tasks. . . We must also subject them to ordeals of toil and pain and watch for the same qualities there" (7) In current terms, educational and vocational guidance were to utilise school records, examinations, and tests.

The Criteria of Selection

Modern societies have inevitably had to face similar problems of selection Various criteria have been used In nineteenth-century England, for example, kinship was one of the grounds of selection for public offices until the civil service examinations were introduced in order to replace this nepotism. In eastern Europe, and to a dangerously growing extent elsewhere, political conformity is an important ground of selection. The doctrine of Western democracy requires selection to be made on the basis of the qualities of people themselves rather than on the ground of their relationships or their environments, and it grants a wide tolerance of belief and attitude. Each individual should be given a fair opportunity of showing what he can do. It is not expected that all will be capable of doing alike, still less is any individual to be prevented from excelling. It is by the ideal of equality of opportunity to realise different potentialities that a system of selection is to be judged.

The Main Road to the University

The process of distribution into occupations through education begins, of course, before the stage of selection for university en-

trance. The first major sorting is the process of transfer from primary to secondary education. At this stage, or within a few years later, some 21 per cent. of the boys and 22 per cent. of the girls previously educated in primary schools maintained by local education authorities in England and Wales are allocated to grammar schools The organisation of secondary education and the methods of distribution vary from one authority to another, but generally speaking the distribution is on the basis of general mental ability, attainment in English and arithmetic, interests and character It is probable that as far as general mental ability is concerned (and it is only one criterion) the dividing line, or rather zone, below which the offer of grammar school education is unlikely is represented by an intelligence quotient range of about 105 to 115 Provision is usually made for transfer to this type of education up to or even beyond the age of 13.

Alternative Routes

The great majority of students entering universities have attended grammar schools The normal mode of matriculation is by means of the first and second school examinations, which lead to the School Certificate and the Higher School Certificate, which are accepted on certain conditions as qualifications for entry upon degree courses Candidates in these examinations need not have attended a grammar school, or any school, however, and a considerable number of candidates enter from secondary schools other than grammar schools Thus exclusion from university education is by no means final for those receiving other forms of secondary education, and as secondary modern schools and more especially secondary technical schools develop they too may constitute a regular if less broad avenue of entry

Further, matriculation by means of the School Certificate and Higher School Certificate is not the only way of establishing a qualification to enter on a degree course. Universities have their own entrance examinations they may use instead of the first and second school examinations Notable among these alternative modes of access are the "mature matriculation" and "industrial matriculation" examinations provided by some universities By means of these a student who has not had a grammar school type of education or who has not obtained the normal matriculation qualifications may, nevertheless, qualify for entry upon a particular degree course. The examination requirements are adjusted to the educational experience of the candidates, and the prospects of their being satisfactory students in a particular course are estimated by interview as well as examination. Candidates with industrial or commercial experience are given credit for educational qualifications obtained by day or evening study for national technical certi-

ficates. Such provisions as these play a valuable part in avoiding finality in selection, in keeping the doors of university education open, to the advantage of the individual, the university, and society as a whole.

Qualifications for Entry

The normal mode of matriculation, however, and the one followed by the great majority of students, utilises the School Certificate and the Higher School Certificate Examinations conducted by the eight examining bodies The Ministry of Education finds it convenient to ask these examining bodies to conduct secondary school examinations, and the universities for their part find it convenient for the most part to satisfy themselves about matriculation requirements in terms of these examinations rather than to conduct their own separate matriculation examinations

The normal practice for a pupil who wishes to enter a university has, therefore, been to sit the School Certificate Examination at about the age of 16, and after two years of sixth form work to sit the Higher School Certificate The Universities have accepted the School Certificate under certain conditions as evidence of general education and the Higher School Certificate as evidence of the somewhat more specialised education appropriate to increasing years as a preparation for studies of a university character The commonest combinations of subjects taken for the Higher School Certificate have been three subjects at the "Principal" standard, or two subjects at the "Principal" standard and two at the "Subsidiary" standard Additional papers in two of the principal subjects have been taken by candidates for scholarships.

Applicants who have the necessary minimum qualifications for entry to a university may also have to satisfy special Faculty requirements, the additional qualifications required for entry on a particular degree course, such as a requirement in Latin for some arts courses or mathematics for a science course.

The changes in secondary school examinations which are shortly to take place are referred to later.

The Numbers Qualifying

The number of children in secondary grammar schools in respect of which grants were paid by the Ministry of Education rose from 342,740 in the twenty years from 1925–6 to 574,303 in 1945–6 The number of children over 16 in these schools rose from 46,029 to 64,863. (It had reached 80,255 in 1932–3 and 74,042 in 1937–8.) Only a minority of those over 16, however, stayed for a full two-years course in the sixth form. The number of candidates from all schools passing Higher School Certificate in 1926 was 5,132,

This had risen to 10,000 in 1938–9, to 14,000 in 1945, and to 18,800 in 1947, when there had been 26,300 entrants (6).

The Mesh of the Sieve

Although university students are selected mainly on the grounds of academic abilities and the qualities which contribute to these, and not on the grounds of their performance in intelligence tests, nevertheless it is interesting to see what degree of general intelligence as measured by such tests is characteristic of students. Professor Sir Godfrey Thomson estimated that the relative intelligence of a group of graduates at a Scottish university could be expressed in terms of intelligence quotients as follows "the upper, median, and lower quartile I Q s were for honours graduates 131, 126, 117, for ordinary graduates 128, 121, 113" (Thomson, 1945) (8). Similar results have been obtained at other universities, e.g. the corresponding figures for a group of students at the University of Manchester were 132, 124, 117 (Leybourne-White) (3) Judging by the results of this investigation, two-thirds of the students in the group were drawn from the top 9 per cent. of the population in respect of general mental ability as measured by such tests The fact that the lowest seven per cent of the group had estimated I Q s no higher than 110, a level which is reached by about a quarter of the population of student age, is one evidence of the obvious fact that other qualities besides intelligence play a part in academic success.

According to the same investigation, if the figures for this group were typical of Britain as a whole, "then it would mean that only about one in five of those whose intelligence is equal to that shown by the better half of students (I Q 124 and over) actually reach the universities" There are, of course, too many assumptions and unknowns to establish this hypothesis as a fact, for example, we know little about the incidence of other qualities, such as interest in studies, which might be prerequisites to admission. Nevertheless, it seems probable that if it were desired and if all necessary measures were taken, a considerably greater number of persons could complete university courses of the existing types and standard The higher proportion of the total population graduating from universities in some other countries supports this opinion. Whether such an increase is to be desired depends among other things on the interests of the individuals concerned, which are not necessarily academic, and on the needs of society for people with an academic education.

Applications and Places

The estimated demands for university graduates and holders of diplomas, previously referred to, required an increase in the num-

ber of students from the pre-war fifty thousand to eighty thousand. This would increase the annual output of students from about 14,200 to 22,200, an increase of rather more than a half. The number of successful candidates for the Higher School Certificate has increased by nearly 90 per cent. since before the war, and there has been an increase in Scotland in the numbers with corresponding qualifications Not all grammar school leavers, however, or even holders of the Higher School Certificate, seek entry to universities. In 1937–8, 9,426 pupils obtained the Higher School Certificate. Of these, 7,866 were pupils of State-aided schools, and of the latter number 4,225 entered universities (6) The number of children staying at school until their 18th year in 1948 was twenty-nine thousand (5) The training colleges are now taking between seven and eight thousand pupils from the grammar schools annually, many of them having the Higher School Certificate, and would probably take about ten thousand if they could get them in another two years' time Without the expansion of sixth forms which has been taking place the output from schools would not be sufficient to meet the various demands for their products In spite of the expansion of the universities, however, the number of applicants for admission remains considerably larger than the universities can accommodate and larger than the estimated demand for university graduates and diploma-holders It is difficult to estimate the demand for entry since applicants usually apply for admission to more than one university, and there is no systematic exchange of information about applications among universities At present, also, the number of places open to school leavers is still limited by the preference given to ex-service students. It seems safe to guess, however, that the universities will continue to be faced with the problem of selecting a number of students from a larger number of applicants who have at least the minimum qualifications for entry on a degree course.

Methods of Selection

The methods by which applicants for admission are selected vary from university to university and from one college, faculty, or department to another. As a rule the results of the School Certificate and Higher School Certificate Examinations are by no means the only data which are taken into account. For entry upon honours degree courses, a higher standard in the most relevant subject or subjects of the Higher School Certificate would be expected, and performance in scholarship papers, if these had been taken, would be regarded as useful evidence Reports from schools are being used to an increasing extent, as are interviews

In using examination results as a criterion of selection, universities believe that a person's performance in examined subjects is

likely to be a useful predictor of his subsequent performance in related university studies. They are urged by many to admit more students who do not do so well in examinations. More stress, it is urged, should be laid on other evidence, such as the way an applicant's character or personality impresses some people.

The Ministry of Education, acting on the advice of the Secondary School Examinations Council, has instituted a new examination and certificate, the General Certificate of Education, which will be awarded for the first time in 1951. The School Certificate and Higher School Certificate will then be abolished. The Minister will leave the examining bodies to conduct the new examination The universities will adjust themselves to this change by recasting their matriculation requirements in terms of the new certificate.

Pupils will not be allowed to enter for the new examination until they have attained a chronological age of 16, because the Minister thinks the education of children is adversely affected if they sit external examinations before that age The award of a certificate will not be dependent on passing in a minimum number of subjects in certain combinations, as with the present certificates certificates will be awarded to all who pass in one or more subjects. The certificate will show the standard at which each subject has been passed, "Ordinary" or "Advanced" or "Scholarship"

The way in which the new examination instituted by the Minister should be used by the universities for matriculation purposes is under discussion. The chief point of controversy is the number of subjects in which the universities should require entrants to have passed Most universities, desiring to discourage premature specialisation by intending students, wish them to pass in five or six subjects, including two subjects at the advanced standard. The opponents of this scheme consider that it makes undue demands on schools and their pupils, that undue specialisation could be avoided without the intervention of examination requirements, and that examination results in a smaller number of subjects, say two at the advanced standard, should provide a sufficient basis of discrimination among candidates for university entrance.

The Need for Research

It is pointless to try to settle the best methods of selecting students on the basis of assertion and counter-assertion. The present methods have been evolved as a result of long experience and investigation, and those to be aligned to the new General Certificate of Education should likewise be regarded as experimental. The urgent need is for research. The purposes of selection should be clearly conceived and the methods adjusted in the

light of investigations of their success in forecasting results The Medical Research Council has begun an inquiry of this kind into the selection of medical students (2), and it is to be hoped there will be many such investigations. It is fundamental to university autonomy that the universities should select their own students. No one else can so well judge whether a student could satisfactorily complete a course of study at the university, and it is in the university's own interest to make the best possible selection This freedom, which is in the general interest, places a corresponding responsibility on the universities to make their methods of selection as perfect as the conditions allow.

The Elimination of the Financial Criterion

It has always been important that selection for admission to universities should be efficient The importance of effective methods becomes more evident as the provision of public financial assistance to students increases. This provision has steadily increased and is now likely to be on an altogether higher scale. It is already probably true that nearly all the students who are admitted to universities are highly selected for academic ability Economic differences have, however, acted as an additional factor in selection, so that some less able students have succeeded in meeting the economic requirements to the exclusion of some more able students who have not. In the general post-war educational policy of this country, this criterion of selection is considered irrelevant and measures are being taken to eliminate it. The appropriate measures were recommended in *University Awards* (4), the report of a working party set up by the Minister of Education in April 1948.

In 1948–9, 68 per cent. of students at universities in Great Britain were financially assisted. Some 22,600 had grants under the Ministry of Education Further Education and Training Scheme for ex-service students, and 4,600 had grants from the Ministry as teachers in training. There were eight hundred State scholarships, one hundred technical State scholarships which assisted students who had left school and continued their education by full-time or part-time courses in technical or commercial subjects, and twenty mature State scholarships for students over 25 years of age from the field of adult education. The Ministry of Education supplemented one thousand one hundred of the scholarships awarded by universities. In these ways students were assisted by the State to the extent of about 6½ million pounds. Local authorities provided about another half-million. The object of the working party was to complete the elimination of financial considerations as a criterion of selection for university education " Our task, as we see it, is to outline a system of awards which shall make it possible for

students qualified for a university education to enter the university unhindered by lack of means" (4).

The working party makes the following forecast of the number and distribution of awards which should be made in the next few years (*op. cit.*, p. 15)

> (*a*) The present intake into universities and university colleges in England and Wales is of the order of 18,000 and we are advised that this figure is likely to remain fairly constant for some years
> (*b*) Of this total of 18,000 we estimate that at least 4,000 will be suitable candidates for open or State awards
> (*c*) In normal times it is likely that about 2,000 will consist of overseas students or others who are not eligible for awards from public authorities in this country
> (*d*) A number of places will no doubt continue for the present to be filled by students who either do not need, or do not qualify for, awards from public funds We put this figure tentatively at 5,000.
> (*e*) There remains a minimum of some 7,000 awards to be made through local education authorities This figure is based on the assumption that four-year grants for intending teachers will have been discontinued

In making its recommendations about the value of awards, the working party has followed the principle laid down in the Education Act, 1944, that awards from public funds should enable students to follow courses without hardship to themselves or their parents. It has accordingly recommended awards sufficient to cover the cost of a student's tuition, books, instruments, clothing, midday meals, travelling, subscriptions, and pocket-money, as well as a contribution towards his keep during both term and vacation. Allowances might also be paid in respect of dependents Parents with an income, after certain deductions have been made, of £500 a year or less would not be expected to make any contribution to these benefits. Parental contributions would increase with income until at £2,000 a year only £30 would be awarded to the student.

The Minister of Education, in a foreword to the working party's report, expressed the opinion that the report went a long way towards establishing equality of opportunity in the highest stages of education He has now adopted the scheme proposed in the report for assessing the value of awards and will put it into effect forthwith.

Mobility rather than Equality

These proposals about the value of university awards, if carried out along with measures to improve the methods of assessing capacity for university studies, should bring about a closer approxi-

mation to the democratic ideal. They would not bring about university education for all who would like to have it. In some ways they would accentuate differences rather than abolish them, because, as Plato pointed out, the longer and more arduous the course the more are the runners spread out. But the democratic ideal is not to abolish the hierarchical structure of society. "The decision to be made by those who disapprove of our present inequality and those who wish to change it is not between a system of inequality and equality, the choice is among various systems of rank" (10).

The ideal is a system in which individuals are mobile enough to find an appropriate place, and the educational measures proposed should increase their mobility by reducing the influence of extraneous advantages and handicaps in favour of intrinsic ones

III. Summary and Conclusions

The happiness of individuals and the efficient working of society depend on different people doing different work in accordance with their abilities and interests. The educational system, up to and including the universities, is among other things a system of selection and distribution for work, an extended process of sizing up abilities and interests and of preparing people for different occupations The universities deal with the occupational training and distribution of comparatively few people but with people whose comparatively rare abilities make them capable of specially significant services to society. The processes of selection, education, and distribution through the universities in this country are at an accelerating rate coming to depend on differences in the quality of people themselves. Some of the measures needed to advance this process still further are as follows.

The methods of distributing children to appropriate kinds of secondary education should be further improved

Access to more education should be kept open as long in a person's career as possible, e g by transfer from one kind of secondary education to another, by the development of classes for children over the minimum school-leaving age in all types of secondary school and by means of matriculating other than the normal secondary school examinations

There should be close co-operation, between universities and the secondary schools which send pupils to them, in the determination of sixth form courses, university entrance requirements, and the selection of students and scholars A greater volume of more scientific research is needed into the prognostic efficiency of the methods of selection as tested by the progress of students in the universities and if possible beyond. In this connection, informa-

tion would be desirable about the careers of ex-sixth form pupils who do not go to universities, and the universities should keep adequate records of the progress of students, with a view, among other things, to providing criteria against which methods of selection could be evaluated.

There should be restraint in asking universities to undertake new forms of vocational education It would be undesirable, even if it were possible, to adopt hard-and-fast criteria for the admission of any kind of studies to the university; but the status to be derived by a profession from a connection with the university should be a consideration of little weight, and the ability of the occupation to provide material for the advancement of learning should be a prime consideration. Education and training should be distributed among a variety of institutions of higher education rather than concentrated in the university alone The university should not, for example, undertake forms of vocational training which could be provided by technical colleges, though there is much to be gained from a close relation between universities and technical colleges Instead of accommodating more and more undergraduates with studies at a lower average level, the universities should co-operate in developing new institutions in this country similar in principle to the American junior college At the same time the facilities for post-graduate training should be increased and made financially more accessible. The provision of those kinds of vocational education which the universities do undertake, e g in medicine, teaching, architecture, etc , should be on a scale related to estimates of future opportunities for employment in these occupations

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See also Comparative Statistics of Great Britain

CHAPTER FOUR

INDEPENDENT SCHOOLS AND THE LIBERAL PROFESSIONS

IT IS common knowledge that independent grammar schools, and especially the group called the "public schools", represented at the Headmasters' Conference, play an important part in training the future members of liberal professions. Their *alumni,* known as "public school boys", are prominent in all learned professions as well as in H M. forces and the civil service. Even in business circles the demand for "public school boys" for appointments to responsible posts is general and results in a high percentage of "public school boys" among the managing directors in all branches of industry and commerce. The purpose of this article is to ascertain more or less exactly the percentage of members of liberal professions educated in the "public schools" and to investigate the causes of their predominance. To answer this question adequately a national census would be required, but to arrive at valid conclusions a significant sample, representing the leading members of all professions, is sufficient The present writer, in his unpublished work on "Education in the Eighteenth Century", investigated the educational careers of 3,500 men in the *Dictionary of National Biography* and has shown that 22 per cent. of all men of this group were educated in nine public schools and another 38 per cent at private schools or by private tutors at home. The social distribution of parents showed that most men of these two groups were sons of peers, the gentry, and the clergy. These facts made it evident that more than half of the selected men of the eighteenth century belonged to privileged classes, who received an educational advantage due primarily to their social and economic position. Since then great social changes have taken place in England. The House of Lords has ceased to be the preserve of a few families and has become in fact a place of retirement for elder statesmen, often of humble origin. Universal suffrage has transformed the House of Commons into a real democratic body representative of the whole nation. Compulsory school attendance made away for ever with the very interesting group of "self-educated" men who played such an important part in the development of the sciences in the eighteenth century. Since the reform of 1902, secondary education has been available to wide circles of the population of both sexes. The establishment and growth of

the University of London and many provincial universities have enormously increased the facilities for higher learning, and the development of technical institutions and adult education has given a new opportunity for boys and girls less academically inclined. From these facts it would appear that the intellectual *élite* of the twentieth century should be radically different from that of the eighteenth In order to select the leading contemporary members of learned professions we could not rely on the *D N.B*, as new names are added only after the death of their bearers For that purpose the author has selected 2,500 (2,522 precisely) names from the *Authors' Who's Who,* 1948 The *Who's Who* contains 13,000 biographies of all living authors of books, published in English, and all the journalists and correspondents of periodicals of the English-speaking countries All foreigners and naturalised British subjects educated abroad were automatically excluded Journalists, correspondents, local clergy, medical practitioners, and others who contributed articles to journals or newspapers were also excluded. Only those authors who had several separate publications to their credit were included University teachers and members of both Houses of Parliament, however, were all included irrespective of the number or quality of their publications Their position justifies our assumption that they all belong to the "leading members" of the two groups of teachers and politicians This selection produced 2,522 names of whom 346 belong to the clergy of all denominations and 1,001 to members of academic professions, of whom 507 are university professors, 284 university readers and lecturers, 152 school inspectors, headmasters and assistant masters, 48 librarians and curators of museums, and 10 others. It is obvious that the university teachers include clergymen as divinity teachers, lawyers, physicians, engineers, and others as teachers of their special subjects. Only those authors who did not teach in the universities were distributed amongst the professions. Non-academic members of professions formed the following groups: legal—97 names; medical—352, military and naval—46, engineers and technicians—54; scientists—45, civil service—142; authors who do not belong to any profession supplied 313 names, and the members of both Houses—125. Thus the 2,522 selected names represent all the liberal professions. As they have published books on their special subjects it should be taken for granted that they are leading men of their groups.[1] The numbers, certainly, are not exhaustive, but considerable enough to represent a true sample. To avoid any misunderstanding we repeat our selection includes only authors with separate publications, who are in the *Authors' Who's Who,* 1948, and all conclusions, to be beyond question,

[1] This is true of the majority of cases, especially of the clergy and academic professions It is not applicable to the legal writers and members of H.M. Forces.

must be limited to this group alone. Table I, on pages 224 and 225, represents the classification of all authors by their professions and educational careers. In addition, all our contemporaries have been divided into three age-groups. Group A, those who were born before 1885, were educated before the reform of 1902, and are at present from 63 to 80 years old. Most of them are retired, but are still active as writers. Group B, those born between 1886 and 1900 inclusive, were educated as a rule after 1902 and are at present from 48 to 63 years old They are now at the top of their professions. Group C, those born between 1901 and 1920, were educated during and after the First World War At present they are from 28 to 48 years old and have already proved their ability in leadership. The middle group is the most numerous and the youngest group is considerably smaller, as should be expected. By their educational careers the selected men were divided into the following groups (*a*) Those educated in nine famous public schools, (*b*) in fifty-one other public schools represented at the Headmasters' Conference, (*c*) in all other English grammar schools, both independent and state-aided Scottish, Irish, and Welsh secondary schools were separated in their own columns, and the last column includes private education, foreign schools, etc The second half of Table I classifies the same groups by universities. Thus Table I gives an over-all picture of 2,522 men classified by (*a*) three age-groups, (*b*) professions, (*c*) secondary education and (*d*) university education. We can now discuss each group separately

Nine Public Schools

The nine public schools Winchester (1387), Eton (1441), St. Paul's (1570), Shrewsbury (1552), Westminster (1560), Merchant Taylors' (1561), Rugby (1567), Harrow (1571), and Charterhouse (1611) were officially separated into a group of their own only by the Act of 1864, but even in the eighteenth century they were clearly the leading few among the large number of the old English grammar schools. Of 3,500 men of the eighteenth century taken from the *D N.B* 22 5 per cent were educated in these nine schools Should the Scottish and Irish scholars be excluded the percentage increases to 28. In the eighteenth century these schools were definitely the preserves of the aristocracy, squirearchy, and the upper ranks of the clergy. By their organisation, methods, and curricula they did not compare favourably either with a group of progressive grammar schools like Christ's Hospital, Rochester, and Manchester, or with private academies and private classical schools. On the contrary, they were backward in every respect, nevertheless they trained 28 per cent. of Englishmen in the *D N.B* This result was due to their social prestige as nurseries of the ruling class and to the social and economic privileges

of their *alumni*. Since then these nine school have changed radically. They are still connected with the Church of England, but more in a traditional than in a dogmatic way Many scholars are nonconformists or even non-Christians. The monopoly of classical languages has given way to a comprehensive curriculum, including mathematics, sciences, arts, and crafts. Bullying and fagging and moral corruption have been replaced to a great extent by the moral leadership of masters and more freedom in the system of self-government. And yet in spite of all these changes something intangible has remained which resembles the situation of the eighteenth century. The social prestige of these schools, based on historical tradition and maintained throughout the nineteenth century, gives to these schools a privileged status in the English educational system and places their *alumni* in a special group From 2,522 in Table I, 490 were educated in these nine schools, or 19 3 per cent, which rises to 24 per cent if Scotsmen and Irishmen are excluded. If we take the three generations separately we have the following figures. the oldest generation have 22·4 per cent. of all or 28 per cent. of Englishmen educated in nine schools. The intermediate generation have 16 7 per cent. of all or 21 per cent of Englishmen The youngest generation—19 3 per cent. or 24 per cent of Englishmen. In a tabular form the percentages changed as follows:

Educated at	*Percentages of all Selected Men*	*Percentages of Englishmen only*
Eighteenth century	22 5	28
The end of nineteenth century	22 4	28
1900–1915	16 7	21
1915–1930 .	19 3	24

The situation has not changed much for two centuries, and only in the twentieth century shows a variation. We shall discuss the recent fluctuation later, here we shall mention that these figures conceal a great change in the social composition of the pupils during the last century. The three groups which were predominantly represented in the eighteenth century—the titled aristocracy, the gentry, and the clergy—are still strongly represented in the twentieth century, but the character of these groups has been considerably changed. The titled aristocracy includes many new creations of different social origin from that of the aristocracy of the eighteenth century. The gentry has lost its previous connection with the countryside and is mixed with a new class, which with capital derived from industry and commerce bought up many of the old estates. Even the upper ranks of the

clergy ceased to be recruited from the second and third sons of the aristocracy and gentry and have a broader social basis. Thus undoubtedly the social origin of *alumni* of the nine public schools has considerably changed and has at present a broader social basis. One circumstance, however, remained the same· the ability of parents to defray the costs of education in these schools.

Other Independent Public Schools

The fifty-one independent schools separated in a special column in Table I consist of two groups. One is the old grammar schools, which developed on public schools lines in the nineteenth century and were accepted as members of the Headmasters' Conference. Most of them have retained the independence up to the present although some of this group were transferred to the Direct Grant List and thus, strictly speaking, ceased to be quite independent. But for the greatest part of the period investigated in this article all these schools were independent The second group consists of nineteenth-century foundations with the exception of Kingswood, founded in 1748, and the Roman Catholic Colleges transferred from the Continent at the end of the eighteenth century. Most of these foundations are denominational and include Anglican, Presbyterian, Congregational, Methodist, Friends, as well as R.C schools. All of them followed the lines of public schools as established by Arnold of Rugby, and in organisations, methods, and curriculum cannot be distinguished from the nine old schools, described already We adjoin here the list of nine schools and the fifty-one independent schools, with numbers of their *alumni* included in Table I In the column of "other English schools" a number of similar schools is also included, but as they supplied less than five names to our selection we did not separate them. This group includes Caterham, Chester, Bristol, Bury St Edmunds, Felsted, Newcastle, Norwich, St Bees, Tiverton, Truro, Weymouth, Worksop, Whitgift, Wyggeston, and three schools outside England: Llandovery (Wales), King William (Isle of Man), and Guernsey. One has to consider that in the nineteenth century almost all of the "other schools" were independent, and that only after the Balfour Act of 1902 were many old grammar schools gradually taken over by the L E A, or transferred to the Direct Grant List. The column of "other schools", therefore, is not as homogeneous as the first two columns. For the oldest generation they are almost exclusively old grammar schools, independent in the same sense as the sixty selected schools. After about 1910 this group includes new secondary schools, established by the L.E.A., and for the youngest generation the schools of the L.E.A. and on the Direct Grant List form the majority of "other schools". As most of the independent schools are nineteenth-century foundations, the eighteenth century had no equivalent group for com-

TABLE I

2,522 CONTEMPORARY AUTHORS CLASSIFIED BY AGE-GROUPS, PROFESSIONS, AND EDUCATION

Born	Secondary Education								Higher Education											
									Universities								Other Higher Institutes			
	9 Public Schools	51 Independent Schools	Other English Schools	Welsh Schools	Scottish Schools	Irish Schools	Private and other	Total	Oxford	Cambridge	London	Provincial English	Wales	Edinburgh	Other Scottish	Irish	Foreign	Military and Technical	Theological	Total
Before 1885																				
Clergy	30	61	58	2	9	9	7	176	70	46	11	17	1	2	4	10	4	—	11	176
Academic	57	106	108	17	58	6	9	361	107	78	53	34	12	25	34	8	4	3	1	359
Legal	17	15	8	1	4	2	1	48	18	10	12	3	1	2	1	1	—	—	—	48
Medical	18	41	20	2	13	7	1	102	6	27	39	7	1	10	5	7	—	—	—	102
Technical	34	49	28	2	11	2	3	129	26	23	17	12	1	3	7	2	1	30	—	122
Literary	45	36	20	—	6	1	6	114	38	30	8	9	1	5	4	1	4	2	—	102
Politicians	18	9	6	2	5	1	4	45	18	5	4	2	—	2	2	2	—	4	—	39
Total	219	317	248	26	106	28	31	975	283	219	144	84	17	49	57	31	13	39	12	948
Percentage	22 4	32 6	25 3	2 7	10 9	2 9	3 2	100	29 0	22 3	14 8	8 5	1 7	5 1	5 9	3 3	1 3	4 0	1 2	96 9

1886–1900																			
Clergy	16	43	38	5	5	6	4	117	43	29	10	19	3	2	3	5	2	—	1	117
Academic	58	134	132	18	65	16	7	430	120	121	53	51	9	21	35	15	2	4	—	430
Legal	6	13	8	1	4	1	—	33	15	9	5	—	—	3	—	—	1	—	—	33
Medical	19	50	44	4	30	6	1	154	8	39	51	16	—	16	18	6	—	—	—	154
Technical	16	43	40	—	8	1	—	107	21	16	25	15	—	2	5	2	4	16	—	106
Literary	41	43	28	2	6	1	4	124	59	23	13	12	1	1	4	1	3	2	—	119
Politicians	12	12	10	1	4	1	4	44	16	8	4	—	—	2	2	—	—	2	2	36
Total	168	338	300	31	122	32	20	1,011	282	245	161	113	13	47	66	29	12	24	3	995
Percentage	16·7	33·4	29·8	3·0	12·1	3·2	2·0	100	28·0	24·3	16·0	11·2	1·3	4·7	6·6	2·9	1·2	2·4	0·3	98·9
1901–1920																			
Clergy	6	21	17	2	1	5	1	53	13	11	6	8	2	1	—	5	—	—	7	53
Academic	33	66	68	7	20	11	5	210	63	58	31	19	5	10	10	12	1	—	1	210
Legal	3	6	4	1	2	—	—	16	7	4	1	—	1	1	1	1	—	—	—	16
Medical	10	44	17	2	16	5	2	96	11	20	30	13	1	9	8	4	—	—	—	96
Technical	12	14	19	1	2	1	1	50	13	14	10	6	1	—	—	—	1	3	—	48
Literary	23	26	17	—	5	2	2	75	30	19	13	5	—	1	2	2	2	1	—	75
Politicians	16	11	4	3	—	2	—	36	26	5	2	—	1	—	—	1	—	—	—	35
Total	103	188	146	16	46	26	11	536	163	131	93	51	11	22	21	25	4	4	8	533
Percentage	19·3	39·5	27·4	3·0	8·7	4·8	2·0	100	30·5	24·5	17·2	9·4	2·0	4·0	4·0	4·2	0·8	0·8	1·6	100
GRAND TOTAL	490	843	694	73	274	86	62	2,522	728	595	398	248	41	118	144	85	29	67	23	2,476

parison. The old grammar schools of the eighteenth century and the R.C. colleges on the Continent did not play the same role in the eighteenth century as they do at present The role of the new independent schools was represented in the eighteenth century by private academies and private tutors. Many members of the aristocracy, the gentry, the clergy, and city merchants educated their boys at home before sending them to Oxford and Cambridge. For our contemporaries that was done by the new and old foundations. We can therefore compare the private education of the eighteenth century with the independent schools of to-day In the eighteenth century, private schools and private tutors accounted for 38 per cent. of all Englishmen selected For our contemporaries the fifty-one independent schools supplied 41 per cent of all English cases. The combined figures (in percentages) give the following table (England only)·

	9 *Public Schools*	51 *Independent Schools*	*Total*	
Eighteenth century	28	38[1]	66	[1] Private education
End of nineteenth century	28	40	68	The first generation, Table I
Twentieth century	24	42	66	The two last generations, Table I

Two-thirds of selected Englishmen are provided by a small group of schools and private tutors in the eighteenth century and by sixty schools at the Headmasters' Conference in our time. In spite of all changes in population and educational provisions the percentages remain stationary. There must be some permanent cause to explain it. All the English secondary schools can be graded into six groups by the average numbers of names they supplied to Table I. Grade I Eton—99, Grade II. 8 other public schools—49; Grade III. 32 independent schools (more than 10 each)—22, Grade IV; 19 independent schools (5–9 each)—7; Grade V. 17 independent schools (less than 5)—3, Grade VI the remaining 600 secondary schools—1 each Before we discuss this peculiar gradation it would be interesting to compare Scotland with England.

Scotland

In the eighteenth-century Scotland, about 40 per cent of Scottish names in the *D.N.B.* were educated in old burgh schools, about 26 per cent. in parish schools, and about 34 per cent. at home by private tutors or in Scottish private schools. Both the burgh schools and parish schools catered for all groups of the

population, and their pupils cannot be considered as belonging to a privileged class. The privileged social group educated their sons privately and accounted for only 34 per cent. of selected men, as against 66 per cent. for England. During the nineteenth century, Scotland followed the example of England and founded a number of new schools on the lines of English public schools. Only seven of them were accepted by the Headmasters' Conference as members, but there are others run on the same lines. These seven Scottish schools are all nineteenth-century foundations: two Episcopalian—Glenalmond and Loretto, and five Presbyterian—

LIST OF 60 PUBLIC SCHOOLS IN THE FIRST TWO COLUMNS OF TABLE I

Nine Public Schools (Number of Names)

Eton	99	St Paul's	65
Charterhouse	45	Shrewsbury	21
Harrow	44	Westminster	60
Merchant Taylors'	40	Winchester	59
Rugby	57	Total, nine schools	490

Fifty-one Independent Public Schools (more than 5 names)

Old Foundations		*New Foundations—cont*	
Bedford	18	Dulwich	38
King Edward's, Birmingham	22	Epsom	22
Bradford	20	Haileybury	31
Christ's Hospital	19	Highgate	15
Manchester	49	King's College School	13
Repton	28	Kingswood	14
Sedbergh	12	Lancing	14
Tonbridge	13	Leys, Cambridge	13
Uppingham	18	Liverpool College	16
		Malvern	14
New Foundations		Marlborough	47
Bradfield	16	Mill Hill	11
Blundell's	12	Oundle	16
Brighton	17	Perse School, Cambridge	13
Cheltenham	39	Rossall	15
City of London	32	University College School	29
Clifton	35	Wellington	20

The following schools had contributed from 5 to 9 names Bedales, Bishop Stortford, Canterbury, Durham, Eastbourne, Exeter, Bootham, Leeds, Magdalen College, Leighton Park, Owen's, Radley, St Clare's; Sherborne, Taunton, and four R C colleges Ampleforth, Beaumont, Douai, Stonyhurst Total for fifty-one schools—841 For sixty schools—1,331, or 53 per cent of all cases and 66 per cent of Englishmen

Edinburgh Academy; Merchiston Castle; Fettes College; Glasgow Academy, and George Watson College. In our Table I these seven schools account for 75 names or 28 per cent. of all selected Scotsmen. (By schools Glenalmond—5; Loretto—4; Edinburgh Academy—22; Merchiston Castle—4; Fettes College—10, George Watson's—20, and Glasgow Academy—10.) They play a similar

role in Scotland as the famous nine in England. There is also a group of semi-independent old schools, like Gordon College at Aberdeen, George Heriot at Edinburgh, and some others. But they form an integral part of the state-controlled Scottish system and cannot quite be compared with the English independent schools. They train, however, a high percentage of Scottish selected men, and the hundreds of new secondary schools cannot rival them. Gordon College, for instance, supplied 20 men to our table, and George Heriot—7. If we compare the figures for the eighteenth century with those of our time we get the following table·

	Private Education	*Seven Public Schools*	*Old Grammar Schools*	*Parish Schools*	*New Secondary Schools*	
Eighteenth century	34	—	40	26	—	in per-cent-ages
Twentieth century	—	28	34	—	38	

The situation is different from that of England, but the exceptional position of the seven public schools shows clearly how much Scottish education of the nineteenth century followed the English pattern. Still more visible is this influence if we compare the numbers of Scottish scholars completing their education outside Scotland. In the eighteenth century, 226 English scholars (8 per cent. of all Englishmen) and 20 Irish (10 per cent.) proceeded to Scottish universities. On the other hand, only 3 Scottish scholars went to Oxford, none to Cambridge, and a few to other non-Scottish universities. Among our selected contemporaries only 43 English and Irish scholars completed their education in Scotland, but as many as 51 Scots (18 per cent.) migrated to non-Scottish higher institutions. The following table shows the influence of seven public schools.

To / *From*	*Oxford*	*Cambridge*	*Other non-Scottish Higher Institutions*	*Edinburgh*	*Glasgow*	*Aberdeen*	*St Andrew's*	*Total*
7 public schools	9	5	10	38	11	1	1	75
All other Scottish schools	7	8	11	61	67	29	15	198
Total .	16	13	21	99	78	30	16	273

It is remarkable that the seven public schools should send one-third of their university candidates to universities outside Scotland. Their example was imitated by many old burgh schools, as most of the Oxford and Cambridge students from "other Scottish schools" come from a few academies of this group. It appears that the English public school tradition has influenced the training of *élite* in Scotland much more than is generally recognised.

Classification by Age-groups

The division of contemporary authors into three age-groups was made with the definite purpose of following up the changes during the twentieth century. As mentioned before, there was no change up to the very end of the nineteenth century However, when we compare the figures for the two generations educated in the twentieth century we notice a definite change. Taking the percentages for Englishmen only, we arrive at the following table

	First Generation	*Second Generation*	*Third Generation*
9 public schools	28	21	24
51 independent schools	40	42	43
Other schools	32	37	33

The percentage for the nine public schools falls suddenly for the generation educated between 1900 and 1915 and rises again for the generation educated between 1915 and 1930. The percentages for "other schools" fluctuate in the opposite direction, whilst the percentages for the fifty-one independent schools increase slowly, but steadily. This fall and rise are observed not only for the whole group but by professions as well. With interesting variations the five largest professional groups repeat the same fluctuations (percentages by age-groups and professions)

	Clergy			*Academic*			*Medical*			*Literary*			*Technical*		
	I	*II*	*III*	*I*	*II*	*III*	*I*	*II*	*III*	*I*	*II*	*III*	*I*	*II*	*III*
9 public schools	20	17	14	21	18	20	23	17	14	45	37	35	31	16	27
51 independent schools	41	44	48	39	41	40	52	44	62	36	38	37	44	45	31
Other schools	39	39	38	40	41	40	25	39	24	19	25	28	25	29	42

The numbers of the legal profession and politicians are too small to warrant any conclusions. The nine public schools invari-

ably show a sudden fall after 1900. We can offer only one explanation of this feature, that is the influence of the Act of 1902, which led to a great increase in the number of "other schools", whilst the nine public schools remained stationary. The fifty-one independent schools, on the other hand, experienced a period of expansion, i.e. accepted more pupils, and thus kept pace with the growth of "other schools." In each profession there were, undoubtedly, some additional causes which modified the general feature. The uneven changes in the third generation cannot be adequately explained, as many members of this age-group, who eventually will be included among the selected men, have not yet published their works. It is quite possible that the public school boys make their careers quicker than the boys from the "other schools" and the increase of their relative strength may be a temporary feature, distorting the true picture. If this suggestion is correct then in a few years the same generation will show a greater percentage from "other schools." But whether the future figures would show a further decrease for the percentages from the nine public schools is a conjecture which cannot be answered at present. One certain conclusion which can be made is that the stationary position maintained throughout the last two centuries has been definitely disturbed by the Act of 1902, and that in future we should expect a similar change as the result of the Act of 1944. The second safe conclusion is that although there is a change, it is very slow, and that the public schools will play their dominant role for many more decades.

Classification by Professions

As mentioned before, the distribution by professions conceals the fact that many university teachers are at the same time members of other professions as well. But as they devote most of their time to teaching they have been classified in the academic column. The following table gives the distribution by professions and secondary education in percentages which show interesting variations (all age-groups).

Profession	9 *Public Schools*	51 *Independent Schools*	*Other English Schools*	*All non-English Schools*	*Number of Cases*
Clergy	15 1	36 0	32 8	16 1	346
Academic	14 8	30 6	30 8	23 8	1,001
Legal	26 7	35 0	20 6	17 7	97
Medical	13 4	38 3	23 0	25 3	352
Technical	21 8	38 0	30 4	9 8	286
Literary	34 8	33 5	20 8	10 9	313
Politicians	37 1	25 8	16 1	21 0	125

We notice at once a considerable difference in the percentages of the *alumni* of the nine public schools. The politicians and the literary men show the greatest percentages (37 1 and 34 8), the academic and medical professions the lowest (14·8 and 13 4). The causes of the variations are many, and we shall mention only the more obvious of them The low percentages for the academic and medical professions are explained by the high percentages of non-English members, especially Scotsmen. If we consider Englishmen only the percentages will rise to 20 for the academic and 18 for the medical profession. The high percentages for the politicians and literary men are, it seems, the result of two causes working in the same direction The nine public schools probably give the best training for writing non-academic books. The second probable cause is of a financial character As a rule " authors " who do not exercise any other profession have to possess some independent means as, in the majority of cases, writing books does not bring a sufficient income Most men educated in " other schools " do not belong to that group In the technical group we included 32 authors from the Army, 14 from the R.N. and R.A.F, most of them of higher ranks, 54 engineers, 44 non-academic scientists, and 140 civil servants, the public school men of this group are almost exclusively members of H.M. Forces and civil service, whilst most of the engineers and scientists come from the " other schools." We must add here some remarks about the members of professions in our table The percentages for all professions, with the exception of the academic profession and politicians, represent only those authors who have published books For the clergy, for instance, the 346 members in our table include a large proportion of bishops, archdeacons, deans, and canons, but only a smaller proportion of many local clergymen, who contributed articles to journals. If all the clergymen in the *Authors' Who's Who* were included, the percentage of public school men would be smaller. That cannot be said, however, about the literary profession. The percentage of public school men among the journalists and correspondents, whom we excluded, is as high as among the " authors " in our table. The 125 politician-authors are the present and past members of the House of Commons, the '33 peers are almost all previous M P.s. All parties are well represented, and the Labour M.P s show almost as high a percentage of public school men as the two other parties. The 140 civil servants represent mostly retired governors, heads of departments, and other higher ranks of the service.

Universities

The public schools and other secondary schools give the future author in a liberal profession the basic literary training, but university education qualifies him in a certain branch of learning and thus is indispensable. With the exception of two pioneers of adult

education, all the members of the clergy, academic, legal, and medical professions in our table had university education or its equivalent. It is only among the technical specialists, literary men, and politicians that we meet authors without formal higher education. In the case of literary men (18 in the table) they were all educated in public independent schools and thus had sufficient literary training without attending a university. In the case of politicians (15) we have a group of trade unionists, educated in elementary and secondary schools, and a few peers, educated at Eton or other public schools, who did not receive formal higher education. The overwhelming majority of authors completed their education at a university or a college, and Table I gives their distribution and classification. In comparison with the eighteenth century the situation has changed with the foundation of the University of London and many provincial universities. In the eighteenth century the monopoly of the Church of England in Oxford and Cambridge had compelled all dissenters to complete their education either in dissenting academies, in Scotland, or on the Continent. At present only in exceptional cases does such migration take place. Confining the distribution to English scholars only we get the following table (in percentages of all selected men with higher education)

	Oxford	*Cambridge*	*Dissenting Academies*	*New English Universities and Wales*	*Edinburgh*	*Other Scottish and Irish Universities*	*Foreign Unit*
Eighteenth century	32	29	6	—	13	16	4
Contemporaries	34	28	—	33	1	2	2

Oxford and Cambridge maintained their dominating position, and the new English universities replaced only the dissenting academies and non-English universities, without attracting the classes always connected with the two old universities. Considering our contemporaries by three age-groups, we notice no change in Oxford and Cambridge percentages and a slight increase for London. The provincial universities increased their percentage in the second generation, only to decrease it in the third. The total number of selected men educated in all provincial universities (without Wales) amounts to 248, or 10 per cent. of all men with higher education. For English university graduates the percentage is slightly higher—12·6. By individual provincial universities the men are distributed as follows: Manchester—68; Liverpool—45;

Durham—35; Birmingham—34; Leeds—33; Bristol—14; Sheffield —9, Nottingham—4; Reading—1, Exeter—1. The predominant position of Manchester among the provincial universities is partially due to the large number of Manchester Grammar School pupils (49), most of whom completed their education in their local university. The presence of local public schools in Liverpool, Durham, Birmingham, and Leeds considerably raised their totals. Nevertheless, even these local public schools have sent one-third of their pupils to Oxford and Cambridge London is in a better position, five of the nine public schools and seven of the fifty-one Independent Schools are associated with London and send many students to the metropolitan university All the remaining public schools as a rule send their pupils to Oxford and Cambridge. Table II gives the distribution of the three age-groups by schools and universities. The nine public schools show a definite preference for Oxford, even Cambridge lags far behind. Oxford received 56 6 per cent of all university students sent by nine schools, Cambridge 31 7 per cent, London 7 6 per cent, and all other universities, including non-English, only 3 9 per cent. The fifty-one independent schools show a more even distribution, but still send to Oxford and Cambridge 70 per cent. of their pupils The "other schools", on the contrary, send more students to London and the provincial universities than to Oxford and Cambridge This preference of the sixty public schools for Oxford and Cambridge greatly influences the composition of the student-body in different universities. It is a permanent feature for all three age-groups. Oxford and Cambridge have a majority of public school boys among their students, London and the provincial universities the majority of boys from "other schools." By percentages the distribution was as follows

	Oxford	*Cambridge*	*London*	*Provincial Universities*	*All English Universities and Wales*
9 public schools	35 6	24 4	9 1	2 4	22 4
51 independent schools	37 2	44 3	33 6	25 3	37 7
Other schools	27 2	31 3	57 3	72 3	40 1
Total	100	100	100	100	100

Pupils of sixty public schools provide more than half of the students of England and Wales (for selected men).

The combination of sixty public schools–Oxford and Cambridge produced 950 men of our table, while the combination "other schools"–provincial universities only 209. These two groups are

TABLE II

From \ *To*	*Oxford*	*Cambridge*	*London*	*Provinces and Wales*	*Other Universities Non-English*	*Military and Technical Colleges*	*Theological Colleges*	*No Higher Education*	*Total*
Born 1885									
9 public schools	105	69	17	3	1	16	1	7	219
51 independent schools	117	104	30	23	16	15	3	9	317
Other schools	61	46	97	75	133	6	8	13	439
Total .	283	219	144	101	150	37	12	29	975
1886–1900									
9 public schools	95	46	9	4	8	3	—	3	168
51 independent schools	109	106	58	34	12	14	2	5	338
Other schools	78	93	94	88	136	4	3	9	505
Total	282	245	161	126	156	21	5	17	1,011
1901–1920									
9 public schools	59	30	10	—	1	1	—	2	103
51 independent schools	50	60	51	16	4	2	4	1	188
Other schools	54	41	32	46	67	—	4	1	245
Total	163	131	93	62	72	3	8	4	536
All age-groups									
9 public schools	259	145	36	7	10	20	1	12	490
51 independent schools	276	270	139	73	32	31	9	15	843
Other schools	193	180	223	209	336	10	15	23	1,189
TOTAL	728	595	398	289	378	61	25	50	2,522

clearly distinguished by their social background and financial position. The remaining men form an intermediate group which fills the gap between the two. Taking each profession separately, we notice interesting variations of the general pattern. The candidates for the clergy, the legal profession, the literary men, and the politicians definitely prefer Oxford; the academic profession Oxford and Cambridge equally, and the medical profession London, irrespective of the school they attended The technical group is the most evenly distributed. In percentage these preferences appear as follows (for England and Wales only).

	Oxford	*Cambridge*	*London*	*Provincial University*	*Military College*	*Theological College*	*No Higher Education*
Clergy	41 0	27 7	8 7	16 2	—	6 4	—
Academic	35 2	31 4	16 6	15 7	0 8	0 2	—
Legal	47 7	26 2	20 2	5 9	—	—	—
Medical	9 3	31 8	44 5	14 3	—	—	—
Technical	22 9	20 6	20 0	13 2	19 0	—	4 3
Literary	45 0	25 2	12 1	9 4	1 8	—	6 5
Politicians	52 7	15 9	8 9	2 9	5 9	1 9	11 8

The last question of interest as regards English universities is the recruitment of university teachers from the three groups of schools. We divide them by groups of studies into (*a*) Theology and related subjects, (*b*) classical languages and ancient history; (*c*) history, law, and social studies, (*d*) English and modern languages, (*e*) mathematics and sciences, (*f*) medicine, and (*g*) technical subjects. The figures are absolute numbers of university teachers, and in the brackets the numbers for headmasters and masters of grammar schools are added, as they obviously belong to the same class as the former.

	Theology	*Classics*	*History and Social Studies*	*English and Modern Languages*	*Mathematics and Sciences*	*Medicine*	*Technical*
9 public schools	6 (3)	26 (8)	38 (7)	5 (3)	18 (3)	6	3
51 independent schools	14 (4)	27 (12)	70 (10)	24 (4)	39 (6)	19	12
Other schools	18 (9)	15 (5)	101 (16)	39 (9)	69 (12)	23	24

The sixty public schools provide about 80 per cent. of classical scholars; in theology, medicine, and historical-social studies they

share the fields equally with the "other schools", but in modern studies and scientific branches the "other schools" predominate. In modern languages the "other schools" provide 57 per cent. of scholars, in mathematics and sciences 55 per cent., and in technical subjects 61 per cent.

Conclusions

The main conclusions from all these tables and calculations are the following (England and Wales):

(1) About 66 per cent. of the leading members of all the liberal professions discussed in this article are *alumni* of sixty public schools represented at the Headmasters' Conference.

(2) About 62 per cent. of them were educated at Oxford and Cambridge.

(3) This position has remained stationary since the eighteenth century.

(4) The group educated at public schools–Oxford and Cambridge is socially different from the group educated at "other schools" and provincial universities.

To explain the meaning of these facts we have to discuss the influence of the three main factors in the training of an intellectual *élite* (*a*) the natural ability, endowment resulting from heredity, (*b*) training at home and school education, and (*c*) social and economic privilege as a result of historical traditions and the financial position of the parents. There may be four possible answers: (*a*) public school boys as a social group have better heredity and therefore greater abilities for the learned professions; (*b*) public schools give better training and preparation for these professions; (*c*) public schools are available only for the upper social group, which has means and connections to promote the careers of its boys; (*d*) the combination of any two or all of these previous factors. As it is a statistical answer to a statistical investigation based on numbers and not on study of individual cases it is valid only as an indication of a general tendency of selection of the English intellectual *élite*. As the independent schools are the most important factor in this selection there is no question of a conscious policy of the Government to that end. The present situation is a result of long historical tradition and the aversion of Englishmen to any radical change.

First Answer: Better Heredity

To consider the factor of natural ability we have to examine an age-group of English boys at the age of 12 years. In the inter-war years the boys of 12 amounted approximately to 280,000. Of this number about 230,000 remained in the primary schools; about 20,000 passed into secondary schools as free pupils; about

22,000 from both primary and preparatory schools passed from them into secondary schools as fee-paying pupils; about 5,000 boys passed from preparatory schools to public schools, and about 6,000 remained in private schools or at home. The first group (primary school pupils) and the last group (private schools and home) do not interest us, because they are the residue after the selection of the ablest pupils by entrance examinations to various types of secondary schools. We have to examine the three remaining groups (1) free-place pupils (20,000); (2) fee-paying pupils of secondary schools (22,000), and (3) public school boys. It is a fact well known from the results of School Certificate Examinations that the free-place pupils as a group were abler than the fee-paying group in secondary schools. It was a quite natural result of stricter selection for free places. Half of the fee-paying pupils came from preparatory schools and thus received the same training as the boys who passed to public schools. They were sent to secondary schools mainly for financial reasons. Therefore it can hardly be assumed that the 5,000 boys of public schools as a group are abler than the 20,000 free pupils creamed from 280,000 boys. Nevertheless, the 5,000 public school boys produce 66 per cent. of the intellectual *élite* and the 20,000 free-place pupils not more than 20 per cent. It is quite evident that heredity has a very minor influence, if any.

Second Answer Better Training

Here we are on more debatable ground It is indisputable that as a group public school boys have better homes and more cultural backgrounds than the boys from "other schools." It has also been proved by tests that boys from such homes have a larger vocabulary and their language is more literary in both content and form That gives them an enormous initial advantage in any training for literary activities. To this advantage is added the training in a public school with great attention paid to the classical languages and the form of expression. We should expect, therefore, that public school boys would be better prepared for literary activities and writing books. We should also expect them to outshine the "other" boys in classical learning. Our tables have confirmed this view with ample evidence. What is astonishing is the fact that even in such subjects as the sciences, modern languages, and technical branches, the public school boys, although in a minority, attain such high percentages. Here the explanation of a better preparation is hardly plausible. The "other schools" train as good, or even better, scientists, linguists, or technicians, but a smaller percentage of them than of the public school boys arrive at the top of their profession. There is another cause which disturbs the clear selection by ability or acquired knowledge.

Third Answer: Social Privilege

If the difference of ability cannot be accepted as an explanation of our facts and if better training can account only for the figures for the literary profession, the main cause of the dominance of public school boys in the liberal professions must be the socially and financially privileged position of their parents. Four years at a preparatory school, six years at a public school, and three years at Oxford or Cambridge cost about £3,500 per boy, and only wealthy parents can afford this educational way. The boys of this class have ample means to enjoy leisure and influential connections to start their careers with an initial advantage The social prestige of the particular public school is another unearned advantage. This conclusion has confirmed investigations published previously.

N. HANS.

Note.—For post-war changes in social origin of university students see the section on Comparative Statistics.

CHAPTER FIVE

SCOTLAND

SCOTTISH problems cannot be adequately understood without some knowledge of the physical features of the country. A large surface of the land is composed of hard, volcanic rock-masses covered in places by a thin layer of soil or peat. The Highlands, as this area is called, has mountain scenery which attracts visitors from all parts of the world but which cannot of itself maintain a sizable population Stretching across the middle of the country is a fertile belt in which are found some of the richest mineral deposits in Britain. In the south the country again becomes hilly although not quite a " land of the mountain and the flood "

From this brief description it is relatively easy to deduce the trend of the distribution of the population, the actual distribution could never be anticipated In 1947 the estimated population was 5,138,600, of whom 3,613,005 were living in the middle belt, and to make matters still worse about one-third of this number, 1,093,000, were living in the city of Glasgow. The unbalanced nature of the population distribution was illustrated in a recent survey by the Registrar-General for Scotland, who pointed out that Sutherland, a Highland county of 2,028 square miles, had on the average seven persons to each square mile, whereas Renfrew, lying close to Glasgow, had one thousand four hundred persons to each square mile, which means a density two hundred times greater than that in Sutherland. One can readily imagine the situation in Sutherland becoming aggravated With such a thinly distributed population, normal community life becomes increasingly difficult and the adventurous spirits seek the more densely populated areas where there are greater opportunities for a fuller life, leaving behind an ever-decreasing population.

At one time Scotland's population was more evenly distributed. In the middle of the eighteenth century, when the population was about 1,265,000, the largest community was about thirty thousand. The people, in the main, worked in the fertile valleys and round the coasts Then came the Industrial Revolution and the discovery of iron and coal together in the Clyde valley; this, with a natural outlet to the sea, contained possibilities of great developments The industrious Scot saw to it that these possibilities were exploited to the full, and the Clyde valley, with its huge iron and steel works, its engineering and shipbuilding, drained the less prosperous country-

side of its manpower. During the past hundred years Scotland's chief source of wealth was derived from these heavy industries. Each particular industry gave rise to others, for example, shipbuilding required a supply of steam-engines, and thus came into being another large related industry. Eventually about one-third of the country's population was thus employed. There was no planned development and parts of the country were turned into one vast, grimy workshop with living conditions which must rank among the worst in western Europe.

The products of these industries were sold in the markets of the world and investments were made in most of the developing countries to such an extent that food could be imported much more cheaply than produced by the farmers at home. When the slump came in the nineteen-thirties, the country reaped a sorry harvest. Unfinished ships lay rusting on the stocks, the foundries were strangely silent, and the mining industry offered only intermittent employment, while some of the most highly skilled craftsmen in the world waited anxiously for an opportunity to earn their livelihood As, ironically enough, it took the preparation for a second world war to bring full employment to the depressed areas of Scotland, it is little wonder that deep down in the hearts of many is the fear that once again may come the depression and that there is a strong desire for a type of employment which while it is less remunerative will provide greater security

There are several smaller industries located in different parts of the country. Printing, for example, demands a high degree of skill and, in Edinburgh particularly, some exceedingly fine work is being executed. The manufacture of textiles is not, as in England, located in one or two places but gives employment in many different parts of the country, from the far north, where the finest Harris tweed is spun in the homes of the people, to the borders, where the woollen industry flourishes thanks to the wool from the fine hill sheep farms. Distilleries and breweries give employment to many, while some towns are largely dependent upon one industry, such as Kirkcaldy on the manufacture of linoleum.

There is need for the development of light industry which can be adapted quickly to the changing needs and tastes of the world's markets The emphasis in Scottish industry must be on quality rather than quantity, for there is little hope of competing with countries like America in volume of production. It follows, therefore, that much more attention will have to be paid to training in industry than hitherto.

Agriculture and mining are now regarded as two of the most important industries, the former because the importing of food cannot be afforded on such a large scale, and the latter because it provides the power for industry and at the same time is a valuable source of export. Both industries are suffering from a lack of

manpower. Besides being a dirty and dangerous job, mining has an unhappy history. Agriculture's needs affect the nation's well-being in a more striking way Changes in the system of agriculture and increasing mechanisation started a drift of population from the rural areas which was further accelerated by the Industrial Revolution, with the result that many country areas are practically devoid of community life.

The pattern of Scottish education was designed by John Knox in a chapter of his first *Book of Discipline* on the "Schools and Universities" The principles he laid down were that there should be a national system of education forming a natural highway from the primary school to the university; that education should be compulsory and that it should be free. There was to be a "school in every parish" and in every town, at which a pupil was to attend until the special talent was discovered by which he could best serve the community Poverty was to be no bar, and while the rich were to pay for their children's education, the clever poor children were to be maintained at school by the State. The present-day bursary regulations, by which a student, whose parent has an annual income less than £280, may receive full university fees, allowance for books, equipment, and maintenance, come very near to realising Knox's ambitions.

Some noticeable results of these educational ideas were evident A national system of schools leads to a democratic outlook. The sons of the laird (landowner), the farmer, and the ploughman sat on the same benches, and the joys and sorrows shared at school led to friendships not often repudiated despite differing fortunes in after-life "Upon its benches the children of every rank in life had met, and had contended for honours, earned only by higher natural gifts, or superior moral qualities. Those whom the accidents of rank and fortune had not yet separated had there formed friendships, which had united the laird and the hind through life, by mutual service and protection. Thus sentiment had overleaped the barriers which divide society into classes, to acknowledge the claims of personal feeling, and to lift humble merit from obscurity."

A brief description of the present Scottish school system is perhaps necessary at this stage. Knox's ambition of "a school in every parish" was achieved, and to-day even in the most remote areas "the schoolmaster is abroad" Education up to the age of 12 years, primary education, aims at giving each child a grasp of the fundamental tool-subjects. Beyond the age of 12 years the schools provide secondary education, which is of two types, senior secondary and junior secondary. The senior secondary schools give a five- or six-years course leading to the Senior Leaving Certificate and entrance to the university. The award of the Leaving Certificate is based on the results of an external examination set

by the Scottish Education Department. The junior secondary schools do not have any externally accredited certificate, although education authorities generally grant a certificate at the end of a three-years course. Pupils who require assistance are granted bursaries from the education authorities when they remain at school after the statutory leaving age of 15 years.

The four Scottish universities at St. Andrews, Aberdeen, Glasgow, and Edinburgh cater well for the intellectual *élite* of the country Boys and girls who have left school can attend evening schools organised by the education authorities and qualify themselves for different occupations. Further educational facilities are provided at the central institutions. These are housed mainly in the four cities, with some notable exceptions such as the Scottish Woollen Technical College at Galashiels Bursaries are given for attendance in the evenings or full time at courses at these institutions.

Scottish education has therefore, from an early period, had some characteristic features There has been a national system of schools; there has been a close relation between primary and secondary education, the upper reaches of secondary and university education were accessible to all, from the Reformation the majority of schools have been controlled by democratically elected bodies. There was therefore little opportunity for the development of private schools of the pattern of the English public school, indeed, the Argyll Commission, reporting in 1868, indicated that there were very few private boarding schools Loretto was founded in 1829 and Merchiston in 1833 No school was erected in Scotland after the fashion of Rugby and Harrow, with a charitable foundation as its basis, till in 1870 Fettes College was built Grammar schools were first established by the Church beside monasteries and abbeys, but by the Reformation all were transferred to the charge of the burgh authorities. These burghers were jealous of their schools and from time to time enacted penalties against any who attempted to teach within the boundaries of the burghs. All, irrespective of status, attended these schools, as was testified by one former pupil of the High School of Edinburgh who "used to sit between a youth of the ducal family and the son of a poor cobbler". Another type of school which came into being was the endowed school. For example, the Merchant Company of Edinburgh collected funds for the maintenance and education of orphan children of the merchant classes. The "hospitals" which were built eventually became schools and to-day form an important part of the education system. These schools, in the main, are for day pupils. They conform practically in every way to the senior secondary schools under the control of the education authorities, they are State-aided and are subject to inspection by the Scottish Education Department.

It must be clearly understood that the small number of private boarding schools does not play a fundamental part in the education system of Scotland. The Scottish tradition is based on the day school controlled by a local authority or a board of governors. The large merchant company schools of Edinburgh differ only very slightly from the high schools and academies of the education authorities, and it is perhaps significant that the term "public school" in Scotland applies to the primary school run by the town or county council A very large proportion of the men and women who play a prominent part in public life in Scotland were educated in non-residential schools.

A distinctive feature of Scottish education has been the tremendous influence of the universities on the schools There has been in Scotland an age-old tradition that the "lad o' pairts", the boy with natural ability, no matter how humble his birth, should have an opportunity of studying at the university. From the glens, from the remote islands, and from the villages, the young men and women eagerly flocked to the universities, often at considerable sacrifice on the part of the parents. There is a well-known story of the Highland porter who, when asked by a traveller from the south what were the occupations of his sons, replied modestly that one was a well-known divine, one a distinguished judge, and the third a cabinet minister. Factually, there is the evidence of the Argyll Commission on Scottish Education which reported in 1867 that 16 per cent. of the students attending the Scottish universities were sons of artisans and skilled labourers.

Attendance at the Scottish universities has always been relatively cheap, they are readily accessible, and there is a traditional belief in the average Scottish home in the benefits to be derived from a university education. These three factors have resulted in the proportion of university students to the population being more than twice that in England, recent figures are Scotland, 1 out of 473, and England, 1 out of 1,018 of the population. As a consequence there is a constant recruitment of the upper and middle classes from the working classes—an important sociological factor.

Entry to the professions has been open to any boy, no matter how humble his birth, for there have generally been sufficient places in the secondary schools for those desiring and capable of profiting by courses leading to university entrance. Unfortunately, it must be admitted that concentration on the "lad o' pairts" often meant neglect of the average and under-average pupil, with the natural result that many left school with a distaste for book learning Secondary education, for long, was the same for all. Even yet, many junior secondary courses for the average and under-average pupil are still at the experimental stage, and many are still merely diluted versions of what the senior secondary schools offer.

While efforts are being made to improve the educational provision for the non-academic pupil, senior secondary courses are still dominated by the requirements of the Leaving Certificate. One reason for this is that the university and a growing number of careers, such as accountancy, banking, and insurance, can be entered only by holders of the Senior Leaving Certificate. At present the certificate is a group certificate, a number of subject passes being necessary for the award. This regulation has been disputed and intimation has just been made that the group principle is to be departed from, thus allowing the different professions to demand a certificate suited to their own requirements It must be admitted, certainly, that there has been a widening of the courses Music, domestic science, technical and commercial subjects have been introduced, thus giving the pupils a greater opportunity of benefiting by courses more suited to their special abilities and aptitudes. Changes have been gradual and introduced against a certain opposition Scotland has been slow to depart from its long traditions, and it is remarkable how few are the pupils who take advantage of these practical courses Education was not intended as a training for an occupation other than a profession. Indeed, it would almost appear that it was advantageous to have the two divorced as much as possible The universities have been particularly adamant on this point, and to-day a boy who has a Leaving Certificate pass in agriculture cannot rely upon this subject to gain his admission to a university course in agriculture; a pass in French is of much more importance! Despite the attitude of the university authorities, a university education, though liberal in content, is often followed by the student for purely vocational reasons. Teaching, as far as men are concerned, is a graduate profession, hence the universities have many students who are taking an arts or science degree solely in order to qualify as teachers. Students in the faculties of medicine and law have little opportunity, too, of benefiting by the liberal educational traditions of the university. This may give a somewhat gloomy picture of the higher branches of Scottish education, but it is necessary to be critical of a system which has served the nation well for many years and is in danger of falling behind the needs of the modern world.

All responsible for Scottish education were determined that every boy and girl should receive a thorough grounding in the three R's (reading, writing, and arithmetic), and that every pupil with the capacity, whose parents were willing to make some sacrifice, should be given the opportunity of a higher education Burgh councils, companies of merchants, and private benefactors were among those who provided the high schools, academies, grammar schools, and colleges, so that Scotland to-day has a generous provision of senior secondary school accommodation. Selection for secondary educa-

tion in Scotland does not involve a scramble for free places but is a method of discovering which pupils can benefit by this type of instruction. The errors in selection have always been mainly errors of inclusion; too many pupils were admitted who for various reasons did not complete the course. In 1946, for example, there were some 9,913 pupils in the fourth year of the Leaving Certificate courses, while in 1947 the number of certificates awarded was 4,503.

About thirty years ago selection was achieved by placing a hurdle before the pupils and if they could jump the barrier they were allowed entry to the senior secondary course. The hurdle took the form of examinations, known as the qualifying or control examinations, and were generally tests in English and arithmetic. In many areas, however, the secondary schools were fee-paying and parents who could afford to pay were able to enrol their children in these schools irrespective of their ability. It is well to emphasise at this point that the fees in most cases were fairly small, being often less than £10 per annum There is a decreasing number of such fee-paying schools under the education authorities, although those schools which are managed by governors and "State-aided" are still fee-paying.

To-day the hurdle conception of selection has disappeared, giving place to the idea that a system of selection must be based on data which will give some indication of a child's success in the future course of instruction, which should be suited to the child's ability and aptitude. In a circular issued in July 1947, the Scottish Education Department asked the education authorities to submit new schemes of selection for secondary education These schemes had to conform to certain principles which were based on the recommendations of the Scottish Advisory Council on Education. These recommendations in turn were reached after consideration of the conclusions of an outstanding piece of research by Professor McClelland and published by the Scottish Council for Research in Education under the title *Selection for Secondary Education.*

The pupil's innate mental ability is assessed by the results of two intelligence tests, his attainment in the basic subjects of English and arithmetic by standardised tests and by the teacher's estimates, which must be scaled to bring them to a uniform standard. The headmaster of the primary school gives his recommendation after consulting the parents All these factors are taken into account when the final decision is being made. Experience has shown that no method of selection approaches perfection, and accordingly provision is made to allow changes of course after the pupil has started on his secondary career. A large number of teachers unfortunately still regard the system of selection as a measure of their teaching ability, and many parents

still regard it as a stigma if their child fails to reach the standard for admission to a senior secondary course. The road to the white-collared job lies in the main through the academic courses, and until recently this type of employment has always ranked higher than working with one's hands, in the minds of many working-class parents a boy was better as a clerk than as a ploughman and the girl better behind a counter than at a loom The need for production during the war years and the country's present economic difficulties have tended to change this outlook and the primary producer is coming into his own.

It is noticeable that the measures for selection for secondary education are of a literary character, they measure ability to profit by literary courses of instruction. It would be a great boon to educators if tests of practical ability were available. At present, opinion is divided on the question of whether practical bents exist at an age of 12 years and, even if they do, whether they can be measured. The Scottish position on this finding is that there is no real evidence to justify the introduction of tests for the selection of pupils with technical ability. Here is a field waiting to be ploughed by the research worker.

Perhaps at this point it is worth while drawing attention to the equality of the sexes in Scottish education Practically all State schools are co-educational, and it is generally with mild surprise that the Scottish educationist listens to animated discussions on co-education. From 5 to 18 years the Scottish boys and girls have been accustomed to learn in the same classrooms and there seems to be no problem. Apart from practical subjects the courses are the same for both boys and girls, and many a Scottish lad has been humbled at examination time by a pupil of the "weaker" sex This lack of differentiation ends on the day the pupil or student ceases organised study, for example, the girl who has been ahead of her male counterpart all through school and university suddenly finds herself at a financial disadvantage when she returns to teach in one of the schools.

The literary and academic tradition of Scottish education resulted in a tendency to ignore the needs of the artisan and the craftsman, practically all the provision for technical education was made available in the evenings and only by a few enlightened employers during the day. The ambitious lad could qualify himself by attending classes on three or four evenings per week after he had finished his day's work. It can be readily realised that only the lad of strong character could survive such a severe ordeal, an ordeal often rendered more difficult by the distance which many had to travel to the centre of instruction. Tradition dies hard, particularly in the heart of the "dour" Scot, and vocational training was for long regarded as something having little or no educational value. The need for technical efficiency during the

war years and the country's present economic position have helped to dispel many groundless fears on this subject, but a good general education followed by technical training is likely to remain a fundamental principle in Scottish education.

Vocational training in evening continuation classes has been provided mainly in three ways (i) in day school buildings, (ii) in local technical schools, and (iii) in central institutions. The first two are organised by the education authorities and the third by independent governing bodies. Instruction is of three kinds (i) preparatory courses for pupils who have left day school without reaching a sufficiently high standard in a subject such as mathematics or English to enable them to undertake a course, (ii) courses or classes for elementary instruction of pupils in special subjects "especially such as may be of use to pupils who are engaged in or preparing for any particular trade, occupation, or profession", and (iii) courses extending over at least four sessions and leading to nationally recognised Certificates such as the Higher National Certificate in Mechanical Engineering These certificates are of a standard sometimes equivalent to university-degree standard

In many areas stress has been laid upon a course of study, students being discouraged and in some cases prohibited from taking individual subjects. For example, in a commercial course pupils must take English and arithmetic as well as typing and bookkeeping. Many students, particularly in the commercial courses, feel that they cannot reach a high enough standard of efficiency in a sufficiently short time in subjects like shorthand and typewriting, and there has thus been created quite a large number of private schools and colleges for commercial subjects.

Despite the strain of working by day and studying by night, a large number of pupils take advantage of evening continuation classes. In 1938, the total enrolments in such classes were 161,938, and the corresponding total in 1947 was 169,688. Of these enrolments, 43,484 and 43,217 were the respective numbers of students in the comprehensive courses. It should perhaps be stated that the fees for attendance at such courses are in the main purely nominal, and with the bursary regulations now in force travelling expenses may be refunded Many lads in the industrial belt of Scotland have left school at 14 years, entered, say, the mining or engineering industry and, by dint of hard work and study, risen to the highest posts these industries can offer. Many, also, have returned as teachers to these continuation schools, which are staffed for technical subjects in the main by men who are engaged in industry and who have gained higher certificates. In addition to these major industries, other trades have courses enabling young lads to qualify themselves for posts of responsibility; the allied trades of the building industry, baking, and the distributive trades are examples.

The "casualties" in the continuation-class system are by no means small, and the sacrifice made by the successful is often too great. Most of the courses are held during the winter months, and with three or four nights per week attendance at classes and the additional study that is necessary, there is little room for recreational and social activities. It is not surprising that the advocates of day release have had many supporters, and more and more firms are prepared to release their employees for at least one day per week. Not only technical or vocational training is demanded, but also a liberal education, for many employers believe that the young worker will become more efficient the more education he receives Unfortunately, the demands of industry and commerce cannot be met at present by the education authorities Provision of accommodation for compulsory day schooling has proved difficult enough and the staffing problem is, if anything, even more acute. The mining industry, which will be discussed at some length later, has drawn up a comprehensive system of day release, and other industries are considering national schemes, these include engineering, shipbuilding and ship repairing, radio servicing, boot and shoe manufacturing, and the furniture industry In addition, many private firms and Government departments have approached the education authorities for facilities. It will perhaps serve our purpose if one well-established provision and one new venture are described briefly.

The printing industry in Scotland has long been famed for the quality of its workmanship It has been said of this industry that it is more concerned with the quality of its work than the marketing of its goods A joint scheme drawn up by employers and employees ensures that before becoming a "journeyman", every boy will receive an adequate training; a local joint apprenticeship committee is responsible for the working of the scheme Each apprentice is carefully selected by means of medical, psychological, and educational tests and must attend evening classes in addition to one day per week day release without loss of pay. During his apprenticeship the boy is given full experience of all branches of the industry. In Edinburgh, where printing is one of the major industries, and in Glasgow, the scheme is in full operation; in Dundee and Aberdeen the scheme is somewhat modified.

Agriculture has become to a large extent mechanised, with the result that the "village" blacksmith has had to become more of a mechanic or go out of business. It is next to impossible for a lad to learn his apprenticeship without some special training, and a scheme for training apprentices in the farriery and blacksmiths' trades has been set up. It is laid down that each apprentice must undertake during each year of apprenticeship an eight-weekly period of training or its equivalent. Naturally, such a course must be centralised, and the course is organised in Edinburgh, where

the lads are accommodated in a hostel. The course includes subjects such as welding, the internal-combustion engine, farm machinery, electric wiring, and bookkeeping. The bursary regulations allow authorities to pay fees and maintenance allowance, so that no lad need be debarred because of poverty from taking the course.

These developments indicate how industry and education authorities working together can be of great assistance in training young men to become more proficient workmen. The need for production means that it is very difficult to train apprentices while "on the job", and such training can often best be given somewhere apart Perhaps the most important function of these arrangements is their selective value. A careful selection is made of the lads and thus misfits can often be prevented. This is a feature of another type of provision which has been made in recent years, namely pre-apprenticeship courses.

These pre-apprenticeship courses were designed primarily to bridge the gap between the time at which a pupil left school at 14 or 15 years [1] and the time he started on an apprenticeship at the age of 16 years. Very often a boy had to engage in some blind-alley occupation for a year or so until his apprenticeship proper could start. The suggestion was therefore made that the education authorities should organise courses which would give a boy some preliminary training in the craft to which he was to be apprenticed

The first course of this nature to be organised was a pre-apprenticeship course in the building industry. The courses were of one year's duration, half of the time was devoted to practical subjects related to the building industry and the other half to cultural subjects such as English, arithmetic, and social studies. Each boy was given a preliminary training in subjects such as joinery, plastering, plumbing, and slating, so that at the end of the year he had a much clearer idea what each trade involved and was therefore better able to select his ultimate employment. Pre-apprenticeship courses everywhere proved to be highly successful. The courses were vitalised by an infusion of the practical work which was allied to the vocational interests of the young people. Interest spread over into the cultural subjects and attendance at the course was extremely high.

The engineering industry was quick to take advantage of similar opportunities and, as engineering tends to attract a more intelligent boy, the pre-apprenticeship engineering courses have been perhaps the most successful of all. The catering and baking industries also entered into the scheme, and the latest development is the establishment of pre-nursing courses. In this latter case the need

[1] Compulsory school-leaving age made 15 in 1947.

is even greater than in the others, for many girls are lost to nursing They must find some kind of employment from the time they leave school until they begin full-time training at 18 years, often enough during that period they lose interest in the profession.

So great has been the success of these pre-apprenticeship courses that many have advocated the introduction of vocational training into the school curriculum. Naturally, this has been strenuously opposed, and the majority of educationists hold the view that these courses should be "end-on" to secondary education. The value of practical subjects in the curriculum of adolescent boys and girls has been more fully realised through the success of these schemes. In a country which depends to such a large extent on her industries, education must reflect the great dependence upon machinery and cultivate in future citizens what has been described as a "feeling of friendliness towards it." Moreover, the spirit of real craftsmanship must be instilled and every encouragement must be given to the able boy to enter industry as well as the professions.

The need for organised facilities for technical education has now been fully realised, and to assist in their establishment there have been set up Regional Advisory Councils on Technical Education These bodies, representing education authorities, central institutions, universities, industry, and commerce, have as their first duty to make a survey of the needs of their areas in order to determine what technical training should be provided Up to now the initiative has lain largely with the education authorities, who are not in a position to view the needs of a region as a whole It is hoped that there will be rapid developments in technical education once these councils have had time to consider the needs of industry in each locality.

In a world with an increasing population the production of food becomes more and more vital to a nation's economy. Scotland, like the rest of Britain, cannot feed its population from its own agricultural resources, it pays for its imported food by exports. To-day there must be the greatest possible home production with the minimum imports. Unfortunately, agriculture was neglected for too long in the pre-war years. Many farmers fought a losing battle against cheap grain imports. Mechanisation resulted in the cutting down of the labour force, and poor housing conditions, lack of social amenities, and greater opportunities in industry drove the best labour into the towns. To-day every effort is being made to restore "the years which the locusts have eaten."

The majority of farms in Scotland are relatively small and the farmer and his family share the work with the staff, creating that democratic outlook which we have already noted as characteristic of the Scottish parish school. The son succeeds his father and often farms are husbanded by the one family for several genera-

tions. Unfortunately, this system does not lend itself to providing opportunities for the ploughman's son who, if of outstanding ability, generally seeks his fortune outside agriculture. It has been the schools which have provided the opportunities for these boys.

It must not be assumed that the rural areas have been drained of their best intellects to such an extent that the intelligence of the children in the rural areas has become lower than that in the towns. In a survey of the nation's intelligence the Scottish Council for Research in Education found that the average intelligence in rural Scotland was as high as that in the urban districts Every attempt is being made to give the rural child an education equal to that of his urban counterpart The broad highway to the university must have one of its starting-points in the small rural school Education, of course, must be rooted in reality, and therefor schools in the country districts give a rural colour to many subjects of the curriculum. For example, science is given a bias towards botany and biology, and many schools have gardens which are worked on an experimental basis

Technical education for the young farm worker has not been developed to the same extent as for urban industries. Some education authorities organise evening continuation classes in agricultural subjects, and there are also three agricultural colleges and two veterinary colleges with a large number of different courses, whole-time, part-time, and in the evenings. The lad determined to succeed has opportunities for further study which can open up different channels of advancement.

Study after a long day in the field is often beyond the powers of the young agricultural workers, and many are unable to face the financial strain imposed by giving up employment in order to attend a college Attempts are therefore being made to introduce courses of study for pupils leaving school Two residential schools have been set up, one at Balmacara in Ross-shire and the other at Lawers in Perthshire These schools have farms attached, and the aim is to give boys and girls a practical as well as a theoretical training in agriculture.

Mechanisation, while it has reduced much of the drudgery of farm work, has also had a serious effect on the life of the country. Besides reducing the labour force, it has also disrupted the social life of the small communities Before the days of the internal-combustion engine and electrical power, the village communities supported men engaged in supplementary employments, such as blacksmiths, joiners, and ditchers. The work done by these men is now either unnecessary or done by large industries in the towns, and they with their families have moved into the larger centres, hastening the decay of village life. Attempts are being made to equip the country craftsmen to meet these changing conditions.

The course of training for blacksmiths' apprentices, for example, has already been described.

Scottish farmers are generally aware of the need for a better cultural, social, and technical education, both for themselves and for the farm workers. Perhaps one of the most significant features in the rural communities has been the activities of the Young Farmers' Clubs. At these clubs the young people in the industry meet together, not only for social functions, but also to study seriously the modern developments in agricultural science. Conscious of the once scornful attitude of the townsman, they are giving thought to cultural studies as well and the high standard of public speaking at many of their gatherings is an indication of the success of their endeavours. Education authorities have recognised the value of this movement and willingly give them every assistance.

The importance of agriculture to the nation's well-being has been recognised. Wages are at a high level, rural housing ranks as a first priority with houses for miners, and subsidies to farmers form no small part of the national expenditure, but the need for a greater labour force is still urgent. Just as in the past our education system tended to concern itself too much with literary achievement, to-day there is a growing recognition of the need to educate men and women to recognise the fundamental contribution to the community made by the rural worker Trevelyan has shown the folly of the "men of theory" who, in the nineteenth century, "failed to perceive that agriculture is not merely one industry among many, but is a way of life, unique and irreplaceable in its human and spiritual values."

Neglected as Scottish agriculture may have been and undernourished as her city dwellers often were, it is a strange anomaly that her contribution to agricultural research has been world-famous. Sir John Boyd Orr's work at the Rowett Institute is of international renown, since 1930, the Imperial Bureau of Animal Nutrition has been centred at the Rowett Institute, and the results of its experiments in feeding live-stock are made available throughout the world, and the Macaulay Soil Research Institute is our counterpart to the Rothamsted Station in England.

The Highlands and Islands offer perhaps the greatest challenge to the Scot. This large area of beautiful mountain and glen was once populated by warring clans who eventually settled down to develop a fairly prosperous cattle-rearing industry. The "lairds" (landowners) found, however, that it was more profitable to turn the land into sheep runs and forcibly drove the people away, numbers of them having their homes burned before their eyes. Gradually the Highlander found himself forced to leave for the towns or emigrate, until to-day, if depopulation continues at its present rate, it is reckoned that it will be complete in a generation.

Much of the land is in the hands of crofters who often have a continual struggle for existence.

The potentialities of this region, however, are great. Water power is there in plenty waiting to be harnessed; the land, if properly cultivated, could once again rear many hardy cattle, and afforestation, if developed on a big scale, would increase the country's resources. These projects are being tackled with considerable vigour but much still remains to be accomplished. As with the rural areas also, economic factors are not the only cause of the exodus to the towns, lack of social life and poor facilities for recreation are adversely affecting the return of the population.

Education, by providing a wider horizon, has undoubtedly not helped the cause of return to the country nor must it be considered that the chief end of rural education is to stop the flight from the soil Such a suggestion would, in the eyes of the Advisory Council on Education, "offend against every reasonable canon of freedom and equality of opportunity Moreover, any such attempt will surely fail, for movements of population are the result of social and economic forces too powerful to be countered by education alone." In the words of one of their witnesses "The greatest illusion under which we are suffering is that anything taught in the schools will prevent social changes from taking place. The school cannot prevent the drift from the rural areas"

The mining industry plays a very important part in the economy of Scotland. In 1947 there were 87,212 people employed in it and there is a crying need for a larger labour force Unfortunately, the mining industry has a very sorry history. Disputes between the miner and the mine-owner have been frequent and bitter, unemployment was all too common in the mining areas and the trail of destruction left behind after the rich seams were extracted has spoiled many beautiful districts. In the mining towns neither house nor public building was safe from subsidence and the derelict miners' rows tell their own tragic story. There was, however, in some areas a progressive outlook on the part of the coal companies. Education schemes were drawn up with the co-operation of the education authorities, and boys were able to take certificates which led to managerial appointments. Many a Scottish miner improved himself by attendance at such classes although it meant rising at five o'clock in the morning, working till two o'clock, and then settling down to study during the remainder of the day.

On January 1st, 1947, the mines were taken over by the Government, and at every pit appeared a notice that it was run "on behalf of the people" Nationalisation meant that there could be a planned development of the mineral resources of the whole country. This development, however, has raised many social problems. For example, several of the pits in Lanarkshire have become exhausted and are uneconomic, while the coal measures in

Fife have still to be worked. There has therefore to be faced the transfer of a large number of people, miners and their dependants, from one area to another.

Mining has become quite a different industry from what it was several years ago. Then the father took his son as soon as he had left school to work with him and learn the craft. Each man had his own "place" to work and many had great pride in their craftsmanship. Mechanisation, however, has put an end to this individuality and the miner must now work as a member of a team controlling and guiding highly complicated machinery. Many employed in the mines are not miners but electricians, engineers, and the like.

The schemes of training devised by companies have been developed in co-operation with the trade unions until there has been outlined a national system. The lad leaving school at 15 must undertake initial training, which is arranged as part of his employment and is done during the day. During this initial training a careful selection is made of the boys and those who are capable of further education are sent on to higher courses leading ultimately to National Certificates in engineering or Managers' Certificates. The idea resembles closely John Knox's vision of the broad highway from the primary school to the university, and to-day any lad with ability and energy can enter the mining industry and eventually qualify for a university degree in mining with a guaranteed lucrative post The prizes in the nationalised industry of mining to-day are much higher than the prospects offered in several professions. Despite this, however, there is still an antipathy against mining, even in the mining areas, and many mothers are hostile to the idea of their sons following in the fathers' footsteps The result is that the mining industry is not recruiting sufficient boys of high ability for the higher posts. There is still also a tendency for the mining industry to blame the education system for diverting boys away from the mining industry into the professions.

Young people in Scotland, as elsewhere, have found themselves in a particular employment not mainly because it was suited to their particular ability and skill but largely due to chance. The major factor was sometimes the boy's special interest, sometimes the desire of the parent, sometimes the advice of a teacher who took a special interest and suggested to a boy the trade or profession where his talent could be used to the full: more often, however, a boy took the first job that was available, with the result that the lad in the mining area became a miner and the lad in the rural area a ploughman.

As one writer has put it· "The future historian who describes the haphazard methods by which the boys and girls of our time chose (and were chosen for) their careers will be disbelieved."

The ambitious boys and parents were, of course, more deliberate in their choice of employment.

The provision in Scotland for vocational guidance, the scientific matching of talents and temperament to the requirements of a job, has been "patchy and inadequate" Most of the pioneer work has been done by the National Institute of Industrial Psychology, which established a division in Scotland in 1920. Not only was guidance given to a large number of boys and girls, but valuable experimental research was initiated. The Glasgow Careers Council, a body representative of teachers and the Ministry of Labour, did much to help boys and girls in secondary courses to decide their future careers Schools here and there have experimented with aptitude testing, but generally guidance is based on a pupil's record in examinations. In many districts, firms have a close contact with the headmaster of the secondary school, who gives the names of likely pupils for vacancies, leaving the ultimate choice to the firm concerned. The senior secondary schools, in particular, have always taken an interest in the future employment of its pupils, and for the able pupil in Scotland the school and the home have generally co-operated to guide him towards his future career.

Selection for types of employment is already taking place in a rough way at two stages of the educational system, namely, when the pupil is 12 and 17 years Mention has been made of the scheme for selection for secondary education If a pupil fails to gain admission to a senior secondary course, then the door to the professions is practically closed to him Again, at 17 years, if a boy fails to gain his Senior Leaving Certificate, the way to the university and several other professions is barred, so that educational selection at these stages is also vocational selection to some extent.

The Unemployment Insurance Act of 1935 gave the Ministry of Labour the authority to set up a Juvenile Employment Service in all areas of Scotland, with the exception of Edinburgh, where a joint scheme with the education authority was already in existence. Juvenile Employment Officers of the Ministry gave advice to school leavers on the choice of employment, basing their decisions on the school record and an interview A recent Act of Parliament, however, based on the Report of the Ince Committee on the Juvenile Employment Service, broadens its scope and gives education authorities in Scotland the opportunity, for the first time, to undertake the service. In England, many local education authorities have been running this service since 1935, but it is not yet known how many authorities in Scotland will take it over.

Vocational guidance is becoming increasingly important for the economic position of the country, and "the increasing preciousness of a diminishing store of youth" makes it all the more necessary that our manpower resources are used to the best advantage. No matter who is responsible for the scheme, close co-operation with

the schools is essential for its successful operation. Teachers must endeavour to assess the potentialities of the pupil during his years at school, potentialities not merely for book learning but for the various types of employment which he is capable of undertaking. Not only so, but it is an essential part of citizenship training to make the pupil aware of the many kinds of work which adults must undertake in a modern community; citizenship, after all, is awareness of community life. The school in turn will benefit by this closer link with commerce and industry, for Scottish education has long been criticised, not entirely without some foundation, as being too much out of touch with the world beyond the classroom walls.

An industrial nation, relying upon exports for its high standard of living, must assess the manpower requirements of its professions, industries, and trades The Barlow Report, for example, estimated the number of scientists to be trained in the universities In Scotland, an attempt has been made to assess the number of the different categories of teachers required in the next few years and selection up to that number has been made. In the same way it would be helpful to know how many doctors and dentists should be trained. These rough estimates would provide an opportunity to steer young people away from the overcrowded occupations and at the same time allow satisfactory arrangements to be made for training.

Scottish education for centuries has been dominated by the universities. The schools were in reality the highway leading to the gates of the university, but the road could be trodden by any, no matter from how humble a home, provided he had the ability. Witness, still in being but no longer used for its original purpose, the university holiday of "Meal Monday", which gave an opportunity to the "lad o' pairts" to return home for a fresh supply of oatmeal to see him through the remainder of the term Within the university gates was a truly democratic community, and at the end of each session divines, lawyers, doctors, and teachers went forth to take up their life's work in many corners of the world, unashamed of their humble birth and proud of their native land

Even though the university meant to many chiefly a means to a lucrative post, yet everywhere there was a respect for learning In the minds of a large section of the population, it represented far greater wealth than worldly possessions. This Scottish tradition is still strong, and there is little likelihood that vocational training will supplant a broad general education. On the other hand, it must be admitted that liberal studies have been pursued for purely vocational reasons more in Scotland than in perhaps any other country.

Education in the schools has, as a result, been largely bookish and academic, and to a large extent unrelated to life. On the other

hand, the Scot as a rule has a good grounding in the three R's. He becomes a philosopher first and a technician thereafter. "Plain living and high thinking" has been a favourite Scottish way of life The Scottish schools, and to a less extent the universities, have not been guilty of over-specialisation, a widely balanced curriculum was preferred to a deep knowledge of one or two subjects

It seems more likely that any change in the educational approach will be towards a more realistic treatment of the curriculum, along with more stress on the cultural side rather than towards the introduction of vocational bias. It has been a common feature for a Scottish boy when interviewed to give an indifferent account of himself and suffer in comparison with his counterpart from an English public school Speech training, games, music, and art are all beginning to play a more important part in school life.

The success of post-school courses for builders and engineers has shown the extent to which practical work can transform a boy's attitude to learning The raising of the school-leaving age to 15 years has made the introduction of the power machines an essential feature of the education of the average boy, and homecraft and mothercraft an essential feature of the girl's curriculum The replacement of the academic by the realistic approach is being steadily accomplished.

Some 97 per cent. of Scottish children attend day schools under the control of education authorities or receiving direct Government grants. The schools have a national tradition and help to maintain that democratic and patriotic fervour that is characteristic of the Scot Freedom from class consciousness is a strong national trait and is fostered to a considerable extent in the school system.

With modern developments in industry it has become clear that if we are to keep our place in world affairs, we must have highly trained technologists, and so there is much greater thought being given in Scotland to-day to technical education On the other hand, many workers must become machine minders, requiring little or no training Education must ensure that they are taught how to live a full and happy life Leisure time is theirs but, in many instances, it is mis-spent; more and more attention, therefore, will have to be paid to ensure the full and harmonious development of the individual, the avowed aim of education

The education system in Scotland does provide to a very large extent equality of educational opportunity, it makes little attempt to train for specific employment, it is democratic in its structure and tends to encourage this tradition, it succeeds in giving a sound education to the able pupil but is only finding its way with regard to the average pupil And of the future? "With our material inheritance much diminished and our position of vantage lost, it is clear as never before that our real wealth is in the character and skill of our people, our hope as a nation in the wisest utilisation of

our human resources, and such utilisation implies not merely a training adequate to the vastly greater technological demands of our age, important though that is, but such education as will secure social cohesion and promote the good life of the individual."

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CHAPTER SIX

EIRE

The Educational System

THE educational system in Eire is under a single authority, the Department of Education. Hence there are hardly any of the difficulties of administration generally associated with a system which is under both central and local authorities, and there is none of the expense. Vocational education, it is true, is under the control of local bodies; but it is carefully supervised by the Department of Education and financed as to two-thirds of its cost. Only the universities are completely independent of State control or State superintendence, though they are in receipt of parliamentary grants annually Agricultural education, except what is taught in the way of rural science or agricultural science in primary, secondary, and vocational schools, comes under the Department of Agriculture.

There is no religious problem· each denomination attends its own schools. As a rule, it is only at vocational schools and at the universities that young people of different denominations meet for educational purposes Socially, there is no segregation of any kind; they mix freely, and meet regularly for inter-school sports and athletics

The introduction of the Irish language as a compulsory subject in primary schools is still a matter of controversy, the main contention being that it imposes a severe hardship on children, particularly dull children, in infant departments whose home language is English But this problem seems at the moment in a fair way to being solved.

Primary schools retain pupils to the age of 14, which is the school-leaving age, and here education, except for those who remain on longer, is free. Its cost, apart from buildings, cleaning, and equipment, is entirely defrayed by the State The Government gives grants in aid of building; but only in exceptional circumstances does it take on the whole responsibility for putting up a school. The parish has thus to meet a large part of initial expenditure as well as of recurrent expenses in both building and upkeep. The pupil has to purchase his own books and materials, which he carries to and from school every day.

Secondary education is not free; but there is no fixed scale of fees. These might be said to depend on the social standing of the

school; but on the whole the charges in most secondary schools, day and boarding, are reasonably low It is significant that the number of pupils in boarding schools is about half the number attending day schools Secondary schools have a second source of income, for they are in receipt of Government grants capitation grants and grants for the teaching of science, music, and handicraft. The State does not pay the entire salary of secondary teachers, as it does in the case of primary teachers, the secondary schools supply the basic salary, while the State gives the increments rising to the maximum salary. The State's contribution to secondary education is substantial the secondary school pupil costs the State more than one and a half times the pupil in the primary school—a fact that is of no small concern to the primary teachers' association, the Irish National Teachers' Organisation Secondary schools are all private property, with the exception of the six Preparatory Colleges which were set up by the Government, at a cost of over half a million, to provide secondary education through the medium of Irish for native Irish speakers intended for the teaching profession The department has no powers in the appointment of teachers, and does not interfere except on educational grounds, primary teachers are appointed by the managers of the schools, the teachers of secondary schools are appointed by their owners.

The system has the advantage of making for smooth running, and of getting official directions carried out rapidly and effectively and putting new ideas into immediate practice. For example, the revival of Irish in the schools could not have been done so well, if the Department of Education had to go into consultation with local education authorities and to contend with the opposition of a number of them On the other hand, a central authority, lacking the critical partnership of local authorities, tends to be autocratic and rigid in outlook and practice and to discourage experiment in method and organisation.

Selection for Secondary and Vocational Education

For some years there has been a serious attempt to ensure that secondary and vocational schools should have pupils capable of profiting by the type of education provided in them But there is no examination at the age of 11 or thereabouts for sorting out children into groups according to ability and directing them into schools suited to their capacity and requirements. At the age of 14 or earlier, all primary school children are obliged to sit for the Primary School Certificate Examination. This was originally intended to furnish a sort of Leaving Certificate for primary school children who had successfully completed the Primary School Course. That is still its main function, for the education of the great majority of children in Eire ends at the age of 14. But it is

also a qualification for admission to secondary and vocational schools. It does not, nor was it ever intended to, assist in determining the kind of school a pupil should be sent to

Secondary education may be said to begin at the age of 11, when grants are paid in respect of pupils with certain attainments, deemed capable of following a secondary school course. The department will accept evidence of such fitness in the form of either the Primary School Certificate or an assessment provided by the secondary schools themselves on the results of an internal written examination. Pupils from primary schools who enter secondary schools even after the age of 14 are not under any great disadvantage, because they have already reached a good level in at least four of the subjects of the Intermediate Certificate Examination, namely, English, Irish, Mathematics, and History and Geography A "good national school education" is still looked upon as an excellent foundation for a secondary school course. If, however, pupils are unable to follow the course, grants are withheld But there is nothing to prevent secondary schools from having pupils other than those recognised for the purposes of grant, they are at liberty to cater for all pupils of secondary school age whatever their ability and attainments This, in a sense, is a good thing, for it enables pupils to remain on at the school of their parents' choice till such time as they are of age and experience to take up appointments in business, or in industry, or in agriculture, and it provides opportunities for a social training and a training in character that help to make the good citizen. The chief role of the secondary school is to provide what may be called a grammar school education, and all grant-earning pupils are required to follow the curriculum laid down by the Department of Education. "The aim of the Leaving Certificate," say the Regulations, "is to testify to the completion of a good secondary education and the fitness of a pupil to enter on a course of study at a university or an educational institution of similar standing." Because of this, the secondary school has been criticised as being merely concerned with the needs of the few entering the professions and the Civil Service, and taking little or no account of the many intended for business, trade, and agriculture. But, as a matter of fact, most schools tend to develop a commercial side, and all of them aim at providing a good general education.

Vocational schools provide full-time two-year courses for pupils who have reached the age of 14 and who have passed the Primary School Certificate Examination. The courses are of a practical nature, and are intended to prepare pupils for, and direct them into, employment. They are called continuation courses, and are usually three in number. junior technical, junior commercial, and junior domestic economy courses. In large urban areas there are full-time day courses in art, and in country districts full-time day

courses in rural science. Pupils are recruited from the primary schools, and they are of two sorts those who cannot afford to pay the necessary fees at secondary schools, and those who do not wish to go to secondary schools but who want, instead, a training of a more general and practical nature. Neither sort is cut off from the secondary schools, because the qualification for admission to a vocational school will also admit the pupil to a secondary school. The decision rests with the parent and not with the Department of Education as to whether a boy or girl will enter a vocational or a secondary school; and the determining factor is either economic or the desire for a particular training, or both.

Opportunities of Education other than Primary

Only about four per cent of the pupils in secondary schools hold scholarships, and in the universities less than five per cent. of the students receive assistance from State and local authorities. According to the latest Report of the Department of Education (1944–45), the number of scholarships awarded in vocational and secondary schools combined is just about one and a quarter per cent. of the number of children in the sixth standard of the primary schools, that is, all those who are round about the age of entrance into the secondary schools Scholarships to secondary and vocational schools are offered on a strictly competitive basis by the county councils, but no county council is obliged to provide scholarships. The scholarships offered by the State are restricted to secondary schools, and are given only to those who are already in secondary schools and who have passed with distinction the Intermediate Certificate Examination, generally taken about the age of 15 or 16, the idea being to give pupils the opportunity of staying on at school for another two years to study for the School-leaving Certificate Examination, success in which gives exemption from matriculation. About one in eighty of those who pass the Intermediate Certificate Examination obtains a scholarship of this kind

Opportunities of secondary education, however, are not confined to those who can afford to pay for it and those who win scholarships, for in practically every town, large and small, there are schools owned and conducted by religious communities of nuns and brothers where fees are little more than nominal and where a boy or girl of ability or whose parents are in straitened circumstances may be educated free of charge. Besides, some of the boarding schools make a practice of providing free education for a small number of promising pupils. The motive is not altogether altruistic, for such pupils help to raise the academic standards of a school, and by their success in public examinations add to the school's reputation. Whatever the motive, the benefit is to the pupil.

Vocational education, which might be regarded as the outstanding achievement of the Department of Education, can be said to be within reach of all in the matter of both cost and accessibility. The fees are moderate, and there are schools and centres everywhere. In addition to the full-time continuation courses given in vocational schools, there are day and evening—mostly evening—classes in technical education, which are designed chiefly to cater for those already in employment. The technical courses usually fall into certain main groupings the engineering and building trades, commerce, domestic economy, art, science, and modern languages; students are allowed to take whatever studies they wish, they are not confined to particular groups of subjects In large towns there is a great variety of courses· in Dublin, for example, there are, among others, courses for opticians, dieteticians, hotel cooks, chefs' apprentices, and tailors' apprentices, a day course in radio engineering, a three-years course in architecture, and a course in town-planning In other towns and counties, there are courses in accountancy, marine engineering, telegraphy and telephony, motor engineering, rug-making, and dyeing. Everywhere the aim is to keep the curriculum linked up with the interests and requirements of the locality. Under the Vocational Education Act, 1930, a vocational education committee even has power to set up and maintain a day technical college providing courses in science, commerce, or art, to meet the needs of people holding posts of responsibility in industry and trade.

The purpose of continuation education is the provision of whole-time instruction prior to employment, and the vocational schools do much valuable work in finding employment for their students The 1926 Commission on Technical Education reported that out of a population of three million people rather less than three hundred were prepared annually for "employment in industrial life"; to-day there are fourteen thousand pupils taking full-time continuation courses, and the schools alone are finding positions for well over a thousand of them every year

In rural areas, sessional and terminal courses in cookery, dressmaking, carpentry, poultry-raising, bee-keeping, and the like are given regularly These courses have a good deal to commend them they bring young people together, they often create new interests for them, and they occasionally succeed in discovering pupils of genuine talent who, after further training, become experts in their particular crafts and eventually follow them for a living. Needless to say, the aim of these courses is not to find exceptional ability but to improve the amenities of life; though a look-out is always kept for the good crafsman and for the leader. In all vocational education, cultural and social activities play an important part; dramatic performances, concerts, dances, and exhibitions of art and craft are held throughout each session,

each under its own specialist teacher or organiser; and the vocational schools are well represented at annual local and regional festivals of music, drama, and art

University education presents a more difficult financial problem there are few scholarships offered, and though the fees are by no means heavy they are beyond the resources of many who could, and would be glad to, profit by a university education. Nevertheless, the universities are full to capacity, and Eire cannot absorb all its university graduates in either arts, science, medicine, or engineering, a great number have no other option but to emigrate There is really no principle of selection here, that is determined as much by the question of cost as of ability, aptitude, and taste. Agriculture and Dairy Science are growing in importance at the universities, because there are now more prospects for those possessing diplomas and degrees, so, too, with engineering A degree in commerce is considered useful to men entering trade and industry. Medicine is the most popular profession, agriculture is the greatest industry.

Agricultural Education

Just over 48 per cent of the people in Eire who could be described as gainfully occupied are engaged in agriculture. The figures for other occupations are relatively small, the highest being 15 per cent for non-agricultural producers

Provision for agricultural education is made in the universities and in secondary, vocational, and primary schools, as well as in a number of "Agricultural Schools" University degrees and diplomas in agriculture are taken with the idea of securing appointments as teachers of the subject, or as inspectors, and not of becoming farmers, and the number of students is rather small In the secondary schools very few take Agricultural Science in the Leaving Certificate Examination, the whole bias there seems to be in the direction of the professions Yet there are magnificent opportunities for the teaching of agricultural science in secondary schools, practically every boarding school possesses a farm, run on modern lines and given over to what is called "mixed farming", from which it draws its supplies of meat, vegetables, and dairy produce—that is really what enables the boarding school to provide secondary education at a low figure. Furthermore, a great number of the pupils in secondary schools belong to the farming class, and eventually return to their farms Vocational education committees make provision for courses in rural science and in rural domestic economy both for those attending vocational schools and for young people already engaged in agricultural pursuits In primary schools in country districts, rural science was a compulsory subject up to 1926, when the Department of Education, in order to give more time to the teaching of the Irish language, made it an

optional subject. Almost immediately about 90 per cent. of the schools in which it was taught dropped the subject Why this should have been allowed to happen, it is difficult to say. But it was a time when the Irish language was being vigorously revived in the schools under the watchful eye of a recently created and ardently patriotic Department of Education, and when teachers were anxious to carry out the directions of the Department as regards both the intensive teaching of Irish and its intensive study by themselves. The omission of a subject could only be looked on as a relief all round.

The Agricultural Schools fall into two classes those financed and controlled by the Department of Agriculture, and those owned and conducted by religious orders and in receipt of grants from the Department Three of the Department's schools provide one-year courses for a total of about a hundred young farmers, while the fourth, called the Munster Institute, provides terminal courses for about fifty girls in poultry-keeping and butter-making Of the privately owned schools, there are twelve for girls, all residential except one, nine offering courses in rural domestic economy, and three being schools of domestic training, with about five hundred students in all. The men's schools are not as many, nor are they as well-attended, just three schools in all offering one-year courses in agriculture and allied subjects, attended by upwards of a hundred students These figures are small in comparison with the importance of agriculture in Eire, and considering that there are nearly four hundred thousand farms in the country

The average farmer, it is true, has little faith in agriculture as it is taught in schools or learnt out of a book, he believes in first-hand experience, he tends to follow tradition and puts his faith in hard work along old, well-established ways rather than in experiment along new lines The farmers in Eire are mostly small-holders nearly 80 per cent. of the farms are less than fifty acres in size, and because of that their owners have little time, capital, or opportunity for experiment But, in spite of their conservatism, farmers and the various agricultural organisations to which about 60 per cent. of them belong ably co-operate with the Department of Agriculture in the attempt to secure economy and efficiency in both production and marketing.

The farmer in Eire clings firmly to the soil. The same family will hold the land from generation to generation. A farm will only change hands when the owner fails and emigrates, or when the family dies out. Rarely do all the members of a family leave the land and go into business or take up other occupations, and seldom does anyone from professional or business stock take up farming as a calling. Farming means for the newcomer considerable outlay of capital and, for everyone except the farmer's son, intensive training over a long period. Yet the farming class lose

more than any other body to trade, industry, and the professions. There is a tendency to blame the educational system for this leakage. But there are other considerations, chiefly economic, that must be taken into account.

The Professions

Not so long ago it used to be said that there were three professions for which a man might enter his sons medicine, law, and engineering Dentistry, accountancy, and others have since come to stay. The schoolmaster has been in the field as long as any, but his social status, as in most countries, is still uncertain and undefined, the Eire Government has in recent years recognised his services by providing or helping to provide him with a reasonable salary and by giving him family and rent allowances

Entrance to one of the professions is chiefly determined by the prospects it offers, and the desire to serve in a great calling Next, there is the question of cost a man of modest means cannot afford to send on his son for medicine or law and maintain him till he earns enough to keep himself Sons of doctors generally become doctors, sons of lawyers go in for law, and so on. On the other hand, schoolmasters sometimes make great sacrifices to have their children enter professions other than teaching It is significant that most of the boys and girls who win county council and university scholarships take up medicine other professions do not greatly attract them It occasionally happens that children are discouraged from following their fathers' profession; and it is not always the most lucrative calling that a parent will recommend.

Administration and Managerial Posts

Education is rarely the deciding factor in selection for administrative and managerial posts, except in cases where highly specialised knowledge is required. A man's experience, his character, his previous record, and his ability to deal successfully both with his equals and with his subordinates seem to be of greater importance A good social background and personal qualities like courtesy and good manners are undoubtedly valuable. But at the same time many consider with Newman that the best preparation for a high post of responsibility is a university education "Its art is the art of social life, and its end is fitness for the world" A degree in law appears to be a fit qualification for a post in administration; for managerial posts a degree in science or commerce. But between the universities and the various bodies representing industry and commerce there has been a notable lack of co-ordination courses in science were not related to modern industrial needs, and courses in commerce did not take account of the needs of business organisations. A knowledge of the Irish language is

regarded as a useful qualification, while languages other than Irish are essential in posts where there is contact in trade and commerce with countries such as France, Germany, and Holland. Yet the numbers taking French in the Leaving Certificate Examination are conspicuously small, while the number taking German is almost negligible.

Leadership

Training in leadership is not, as a rule, consciously given in either school or university. But there has been a tendency in this direction for a long time. For example, in many schools, more especially the boarding schools, responsibility for organisation and discipline is shared with senior pupils; but this is not general, as yet. In all schools, games and athletics are a prominent feature, and teams are entered regularly for matches and competitions between schools, counties, and provinces Concerts and plays are not new to secondary and vocational schools, debate and discussion are gradually coming in, but they have yet to be given their proper place. Education in secondary schools is still too bookish, and too bound up with examinations to admit of much opportunity for exchange of ideas. In the universities there is far more room for social intercourse and for the matching of wits. But it continues to remain true that the universities do not make a sufficient contribution to leadership in politics, in trade and industry, or in agriculture.

Movement from One Grade of Society to Another

The late Sir Horace Plunket, founder of the Co-operative Creamery system in Ireland, used to relate that when he was ranching in one of the western states of America he met men of every country in Europe except Irishmen, the Irish countryman, born and bred to the soil, remained in the cities for the sake of the companionship of relations and friends rather than face the comparative loneliness of the Far West where opportunities were very much greater The same thing can be observed of groups of Irish countrymen who have settled in Great Britain The people have a proverb which says " It is better to be quarrelling than to be alone." They are sociable, friendly towards strangers, and they are attached to those among whom they have been brought up, hence they tend to remain in the same occupation and in the same place for generations. This disposition has the effect of keeping ambition in check

Yet in Eire itself, and abroad too, there is movement from one social grade to another. The absence of any comprehensive scholarship system is undoubtedly a handicap, but the excellence of the work done in the primary schools and the comparative ease

of entrance into vocational and secondary schools have made this movement possible. Appointments in the Civil Service, the Electricity Supply Board, and other bodies, open to all and secured through competitive examinations and not through patronage, provide a foothold on the social ladder for boys and girls of ability, but this movement is limited. The main movement is from the country to the town, from the land to trade, industry, and commerce, and, in the case of the owners of large farms, to the professions. This is a movement to be regretted, for it deprives agriculture of trained workers, and of many men both of intelligence and of energy This is one of the chief problems that Eire has to face in the development of its greatest industry.

The educational system can hardly be said to encourage or promote movement from one grade of society to another But the opportunities are there for the intelligent and industrious, and the schools are not slow in providing them for those who show promise.

P. J. DOWLING.

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SECTION III

U.S.A. AND THE DOMINIONS

Introduction

THE United States and the English-speaking Dominions represent, from an historical point of view, a number of variants, sprung from the same roots, experiments in the transplantation of social systems The first colonists attempted, in each case, simply to reproduce improved versions of the societies they had known in the Motherland Then, later, responding to new economic and geographical forces the new societies moved in new directions. Factors, recessive in Britain, gradually became dominant. Traditions rejected at the time in the Old Country were accepted and flourished This is true even though in the United States, in Canada and in South Africa a very large proportion of the European population is not of British stock For, in all three countries, the English and Scottish settlers set the theme by establishing the institutional framework within which later developments took place. Immigrants from other parts of Europe accepted it and adjusted themselves to it

A point of vital importance is that in all the new countries the social spectrum is much shorter than it is in England they have known neither a dominant and privileged aristocracy nor a suppressed and degraded proletariate Middle-class values have long been predominant and, reinforced by the influences of the frontier, they have encouraged strongly egalitarian feelings and promoted the general acceptance of the view that all citizens should have an equal chance of rising, quite irrespective of the accident of birth. A system of privileged schools serving a particular social class, although present, plays a comparatively unimportant role Everywhere one now finds a public system of non-selective secondary schools, serving as common schools for all the children, except the Roman Catholics and a small group of wealthy families On the other hand, one might perhaps note that, in the past, social advancement has not really depended upon formal education but rather upon individual qualities of energy, enterprise, and initiative. Thus the importance of education as a social elevator has not been very obvious. One consequence is that examination systems are as yet little developed.

With the exception of Australia, where there are only a few thousand aborigines living far away from the centre of popula-

tion, each of the Dominions as well as the U.S A. contains within its borders different racial communities. In New Zealand, there are the Maoris, in Canada, the Indians and Eskimos, in the U S A, the Negroes and, in addition, small groups like the Indians, and there are the numerous communities of the South African Union—one of the most painfully perplexing racial situations in the world. In addition, the U S.A., Canada, and South Africa have large European communities with their linguistic, religious, and cultural traditions different from the British Thus, all these nations face a problem of cultural adjustment, one feature of which is to ensure that members of the different communities do not feel unjustly treated Of course, this means that, at least in time, all the divergent groups must be given full equality of access to educational resources

In all these countries, too, there is the perplexing problem of giving equal treatment to country and town. Many people live in isolated farms or small villages Consolidation of small districts, public transport, and correspondence courses go far to solve this problem

To sum up, therefore, it may be said that, in these new or comparatively new countries, family factors play relatively little part in the process of social selection of personnel, and that democratic school systems already exist On the other hand, in two countries there exists racial or ethnic discrimination against coloured people which leads to social and educational segregation.

Turning now to the three Dominions of the Indian Peninsula, one is struck, first of all, by the enormous differences between them and the English-speaking Dominions We have here ancient societies, shaken to their foundations by the impact of modern technology and European culture A teeming population, living in small villages and relying mainly upon primitive agricultural techniques, widespread poverty, effects of a caste system, all these are obstacles to modernisation. The chief educational problems, it seems, are at the moment those which arise from the attempt somehow to provide some sort of schooling for all rather than those of democratising already existing systems of selection

Yet, at the same time, one might perhaps point out that there are some resemblances, too In the Indian Union, in Pakistan, in Ceylon, social institutions of British origin have been imposed too, but of course from above, and British versions of the democratic ideal have had wide currency for many years Whether they have real vitality in the Peninsula and whether they have taken deep root, time alone can show If they have, and if these ancient nations can translate into their own idioms what is universal and purely human in those institutions and ideals, a lesson of immense significance will have been taught to mankind

EDITORS.

CHAPTER ONE

UNITED STATES OF AMERICA

EDUCATION in the United States of America is closely and actively related to the individual's task of selecting and preparing for an occupation. As he achieves this task the individual forms his most important connection with the adult society and finds his principal role therein Consequently it is useful to consider the occupational structure of the American society and its socio-economic framework as a basis for understanding how boys and girls are educated for their occupations

The Social Background

The United States is a land of great occupational mobility People move about from one job to another. They frequently change their occupations It is expected that a young man will try out several kinds of work before he "settles down" to something permanent. But occupational mobility is not restricted to early adulthood There is another period of change for many men near the close of their working lives, when they may change from a strenuous occupation to lighter work, such as moving from farm or heavy factory work to janitor work In a study of men over 35 in a California city it was found that these men had followed an average of four different occupations for periods of eight months or more.

However, there are certain relatively stable occupations in which the mobility is low. These stable occupations fall into three categories·

(1) The professions, which require a long training period—e.g medicine, university teaching, the priesthood or ministry, engineering, and chemistry.

(2) Farming, except that many farmers shift to lighter, urban work in their later years.

(3) Occupations requiring a high degree of manual skill and training—e.g tool and die maker, watchmaker, electrician, plumber, painter, carpenter.

To illustrate occupational mobility, such histories as the following are frequent

A. is a young man aged 18 who enters a factory and is put on a job which he learns in about three weeks. His work is to perform a simple operation over and over again with one or two tools. For

example, he may bore holes with a drill press in a piece of metal that will become part of an aeroplane. He soon reaches the maximum earning power on this job. If he is not satisfied with his job, because he wants to earn more money or to find a more interesting kind of work, he watches for an opening in his factory to a different and "better" type of work. Eventually, if he is a regular, responsible worker he may become a foreman, who is in charge of other workers. But the smooth course of his occupational life may be broken by a change in business conditions which causes his factory to reduce its labour supply, or by the development of a new industry which offers people high wages and rapid promotion. Thus he may change to another kind of factory, or he may give up factory work to become a clerk in a hardware store, or an attendant at an automobile service station. Such a man may have six or eight quite unrelated jobs before he finishes his working career

B. is a Negro boy, big and strong, who gets a job in a foundry, first as a helper, and then, when he becomes a man, as a moulder. The work is heavy and unhealthy, but the pay is good After eight or ten years of it, *B* may find that he is wearing out, and he may look around for something else. He may apply to a railway company for a position as a baggage porter. If he satisfies the requirements for this work he will be sure of a job for twenty or thirty years, until he becomes an elderly man

C. is a girl who leaves school at the age of 16 and gets a job as a clerk in a 5- and 10-cent store, where she stays four or five years, until she marries. She then quits work and has two or three children during the next several years But her husband's earnings are not enough to support the growing family, and she takes a part-time job as a waitress in a restaurant, working in the middle of the day, so that she can be at home with her children and her husband in the evenings As her children grow older, she may take a full-time job in a factory, where the pay is good for women with nimble fingers By the end of her working career she may have had six or eight different jobs, between babies and after her children were old enough to care for themselves.

D. is a young man who finishes secondary school and goes to work in the office of a company, where he does well and is soon promoted to a better position He studies in evening school, and is promoted again. He moves up steadily, and eventually becomes one of the managers.

E. is a girl who has taken a commercial course in secondary school which prepares her for office work. She finds a job as a typist in a real-estate office in her home town, and enjoys this work for two years, while living at home Then she begins to wonder whether she will find a husband in her own town. Since the "right" man does not seem to be in sight, she goes to a neighbouring city and takes a course in shorthand at a training college

for secretaries. This equips her for a better job as a private secretary and she finds such a position in the office of a law firm. After several years of this work with no husband in sight yet, she decides to explore the world more widely. She goes to California and gets a position as secretary to one of the vice-presidents of an aeroplane manufacturing company. The years march on, and she becomes a highly trusted confidential secretary, whose "boss" leans heavily on her steadiness and knowledge of detail to get most of his routine business done.

The foregoing examples illustrate the three types of occupational mobility which are common in the U S A. They are

(1) Movement from one kind of job to another, with no great change of earnings after age 25 or 30. This type of mobility has been frequent in the U S A., due to the development and expansion of new industries, such an automobiles, aeroplanes, shipbuilding, radio, and chemicals These new industries created new job opportunities. Also the swings of the business cycle have made work alternately plentiful and scarce, causing people to change from one kind of job to another

(2) Movement from one part of the country to another, with or without change in type of work This type of mobility has been frequent in the U S A as a result of the development of new industries in the West and South, and consequent to the discovery by Negroes that they could find better wages and working conditions in the urban North than in the rural South

(3) Movement from one level of job to a higher or a lower one, with higher or lower pay and prestige This is *vertical mobility*, as compared with *horizontal mobility* of the two kinds just mentioned Vertical mobility is so much a part of American life that it is often spoken of as the "American Dream", and is illustrated by such well-known aphorisms as "from rags to riches", "from the log cabin to the White House", "from office boy to bank president". Most vertical mobility has been upward, due to the fact that people grow in skill and strength and knowledge in their early adult years, and due to the fact that the better positions are continually vacated by older people. Nevertheless, downward mobility is well known and generally feared, especially by people past middle age, who find it hard to keep the pace set by younger people.

Table I gives data from the U S census on occupational distribution at two different dates, 1880 and 1940. These data show that there has been a great shift of occupations during the past two generations Principal factors in the changing occupational pattern have been (*a*) industrialisation, both in the cities and on the land, thus drawing labour from the farms to the factories, (*b*) technological development, which created new types of work, such as production on the assembly line in an automobile factory, and made other jobs obsolete, such as blacksmithing and carriage-making;

(*c*) urbanisation, which created certain characteristically urban occupations, such as dry cleaning and beauty culture; (*d*) discovery of natural resources, such as coal, petroleum, and iron, upon which new industries were built, and (*e*) rise in standard of living, which increased the demand for the services of doctors and dentists and other professional workers

Table II shows how the numbers of workers in various occupational categories changed between 1910 and 1940. There has been a drastic decrease of agricultural workers, and a great increase of professional and managerial workers and officials.

It is not known whether occupational mobility is decreasing or increasing in the United States Factors tending to reduce occupational mobility are (*a*) the slowing-down of population increase, (*b*) the disappearance of the western frontier, (*c*) unemployment compensation, and (*d*) the measures taken to reduce unemployment and to stabilise the business cycle. On the other hand, factors tending to increase occupational mobility are (*a*) the development of new peace-time industries, such as the aeroplane and radio industries, which have built factories in new places and have created new kinds of work, (*b*) wars, which have created war industries, such as shipbuilding and munitions-making, that drew people to new places and taught them new skills, (*c*) exhaustion of soil and other natural resources, forcing people to move away to seek a livelihood, and (*d*) decentralisation of large industrial corporations.

Age and Occupation

Not only have people moved about a great deal within the occupational structure, in addition there has been a change in the age composition of the working force in the United States Before 1920 the labour force was predominantly young, made up of youthful, native-born people and youthful immigrants Then the flood of immigrants that had reached a million a year just before World War I was reduced to a trickle, the average age of the population increased steadily, and the material standard of living rose so high that the majority of people could afford to keep their children in school up to the age of 16 and 18 and 20.

Consequently, the decade 1920 to 1930 was a period of decrease of young people in the labour market This withdrawal of young people from the labour market was continued during the 1930–40 period, but for different reasons The major unemployment crisis of 1930–5 made it very difficult for young people to get jobs. Government youth-serving agencies were set up to care for young people who would normally have gone to work, it was not until the latter part of this decade that economic conditions improved to the extent of creating a demand for youthful workers in the labour market.

TABLE I

OCCUPATIONAL DISTRIBUTION IN THE U S A
(1880 and 1940)

Occupation	*Percentage Distribution*			
	Male		*Female*	
	1880	1940	1880	1940
Agriculture, forestry, and fishing	60 5	23 5	24 8	4 4
Mining	1 8	2 7	—	0 1
Construction	0 1	5 9	—	0 3
Manufacturing	19 7	24 3	23 9	20 9
Transportation and communication	3 8	8 1	0 1	3 1
Wholesale and retail trade	7 1	16 2	2 1	18 2
Finance, insurance, and real estate	0 4	3 0	—	4 1
Business and repair services	—	2 3	—	0 7
Personal services	2 8	3 3	41 6	25 8
Amusement, recreation, etc	0 8	0 9	—	0 7
Professional services	2 5	4 3	7 2	16 6
Government service	1 4	4 2	0 3	3 0
Other	—	1 3	—	2 1
TOTAL	100	100	100	100
All employed persons . .	84 8	75 3	15 2	24 7

TABLE II

OCCUPATIONAL TRENDS IN THE U S A
(Percentage change in absolute numbers, 1910–40)

Occupational Group	*Percentage Change 1940 over 1910*	
	Male	*Female*
Total male . .	+ 32 7	—
Total female	—	+ 59 1
I *Agricultural Workers*		
Farmers and farm managers	− 14 3	− 44 0
Farm labourers and foremen .	− 19 3	− 67 8
Unpaid family members working on farms .	− 55 2	− 80 8
II *Non-agricultural Workers*		
Skilled craftsmen and foremen	+ 34 9	+ 20 0
Operatives and kindred workers .	+ 49 7	+ 28 6
Unskilled labourers, except farm and mine .	+ 1 8	+ 46 8
Professional and semi-professional workers . .	+ 106 4	+ 108 5
Proprietors, managers, and officials, except farm . . .	+ 70 7	+ 270 7
Clerical, sales, and kindred workers	+ 67 3	+ 212 8

TABLE III

EDUCATIONAL AND OCCUPATIONAL STATUS OF YOUTH IN THE U S A, 1900–37

BOYS

Year	Age 15–19			20–24		
	In School, Not Working	*Actually Working*	*Not in School, Not Working*	*In School, Not Working*	*Actually Working*	*Not in School, Not Working*
	%	%	%	%	%	%
1910	35	63	3	—	—	—
1920	35	58	7	4	87	9
1930	43	44	13	6	82	12
1937	51	30	19[1]	6	70	24[2]

GIRLS

Year	Age 15–19				20–24			
	In School, Not Working	*Actually Working*	*Not in School, Not Working, Not Married*	*Married, Not Employed*	*In School, Not Working*	*Actually Working*	*Not in School, Not Working, Not Married*	*Married, Not Employed*
	%	%	%	%	%	%	%	%
1910	38	34	18	10	—	—	—	—
1920	40	31	18	11	3	36	15	46
1930	46	25	18	11	4	40	13	43
1937	56	19	14[3]	11	4	40	14[4]	42

[1] *Includes 2·6% workers on unemployment relief projects*
[2] *Includes 3·1% workers on unemployment relief projects*
[3] *Includes 1·0% workers on unemployment relief projects*
[4] *Includes 1·2% workers on unemployment relief projects*

Table III shows how drastically the juvenile labour force was reduced in the United States during these two decades. Since 1940 there has been an upswing of employment of young people, in the armed services and in industry, and unemployment has practically disappeared in this age-group.

TABLE IV

EMPLOYMENT OF YOUTH UNDER 16

(Percentage of boys and girls aged 10 through 15 who were gainfully occupied)

Year	*Percentage of Boys*	*Percentage of Girls*
1890	26	10
1900	26	10
1910	22	8
1920	17	6
1930	6	3
1940	*	*

*Number is negligible Statistics no longer collected

Table IV shows that employment of boys and girls below 16 had practically disappeared by 1940 in the U S A However, the manpower demands of World War II drew many children aged 14 and 15 into employment and, at the present time (1949) there may be as many boys and girls of these ages at work as in 1930.

Social Structure of the U.S A.

The United States is so large and so complex a society that it contains a number of different cultural groups within its borders. All these groups are alike in certain ways—they share a common government, common language, common loyalty to the nation, common political parties. But these groups are different in certain significant ways, too Some of them differ in religion, others in moral attitudes, others in skin-colour They differ from each other enough to justify the statement that they have different cultures, a culture being a set of common and standardised ways of thinking and behaving. The principal cultural sub-groups in the U.S A. are of two types—social classes and ethnic groups The ethnic or foreign-nationality cultures are disappearing because immigration has dwindled away and the former ethnic groups have learned American culture.

Social class differences are the principal cultural differences in the United States to-day. The American social classes have been examined in detail by social anthropologists in several parts of the country. They have found a hierarchy of groups into which people fit themselves, with a considerable degree of movement existing be-

tween them. Each group consists of people who participate, or may participate, in intimate social relationships with each other, but do not associate so freely with the groups which are socially defined as "above" or "below" them The people within a given social group or level visit with one another, spend their spare time together, and encourage their children to marry into families of the same social level. But the social classes or levels are not closed, hard and fast, in America. People are always climbing up and going down the social ladder, leaving one social level behind and entering another.

In a community of a hundred thousand in the Midwest, and even in smaller communities in the East, there are six clearly marked social classes In other types of communities there are more or fewer social classes, depending on the size and complexity of the community.

When the six social classes are ranked on the basis of their prestige in the thinking of the people who live in the community, they have been named, as follows

Upper-upper
Lower-upper
Upper-middle
Lower-middle
Upper-lower
Lower-lower

The social anthropologists have found that each of these social classes has its own cultural traits and behaviours—a social class culture—as well as the common American culture which it shares with the other social classes. There are differences in attitudes towards education, and in the amount and types of reading done in homes of different social classes. There are differences in attitudes towards property, and of course there are differences in the quality and variety of property—furniture, size of house, tableware, pictures on the walls, books on shelves, and so on and on. There are also differences in practices of child-rearing, starting with the earliest training the child receives, in eating and toilet habits.

In size, but not in power and prestige, the two upper classes are almost insignificant. They make up together no more than 3 per cent. of the population. Even the upper-middle class is rather small, being about 7 or 8 per cent. of the total population. The two largest classes are the lower-middle and the upper-lower classes, which contain altogether about 70 per cent. of the total population, distributed differently between the two classes in different types of communities The lower-lower class consists of 15 to 25 per cent. of the population.

Another social group of significance in the U.S A. is the caste-like group, of which there are several. The Negroes form the

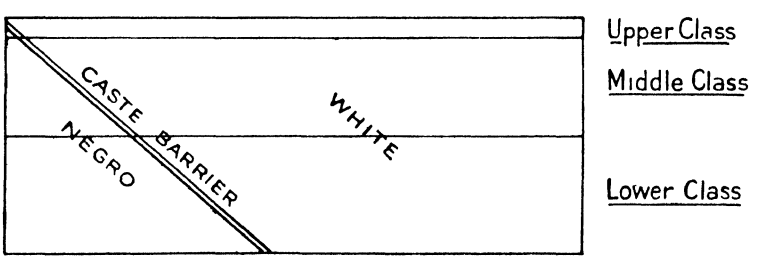
principal caste-like group. They are separated either by law or by custom from intimate personal relations with whites in most places in the U S A, although the separation is much less rigid in northern cities than in the rural parts of the country and the urban South. Some Negroes mingle freely with some white people, generally at the middle-class level, in northern cities. Intermarriage and miscegenation of Negroes and whites are rare, although they do exist, and did exist to a much larger extent in the days of Negro slavery. Most Negroes in the U S A have some white ancestors

The caste-like nature of the Negro group is pictured in Figure I. The Negro and white groups have parallel social classes, but the relative sizes of the classes differ in the two groups. The Negroes have relatively more lower-class people, perhaps because Negroes have been barred pretty largely from entering the higher-level occupations and in large measure denied educational opportunity to prepare themselves for these occupations

There are several other, smaller, caste-like groups, all dark-skinned There are Latin-Americans (some immigrants from Mexico and others old residents of the South-west), Japanese, Chinese, American (Red) Indians, Porto Ricans, Filipinos, Hawaiians All of these caste-like groups suffer from a degree of discrimination in respect of occupational opportunity

Figure I

Social Structure of Caste-like Groups



However, the caste-barrier is slowly being reduced Negroes and other dark-skinned people are associating more closely with whites in schools, restaurants, hotels, theatres, railroad trains, churches, etc., especially in the northern and western parts of the country

Most Americans believe that the caste-barrier is undemocratic, and they are uneasy about it. They want to see the situation changed, with the caste-like groups getting more economic and educational opportunity.

Characteristic of a social class system, as distinguished from a

caste system, is the fact that movement from one class to another is possible. Such movement is called social mobility. In the U.S.A. a considerable degree of social mobility is regarded as desirable and in keeping with democratic principles For this reason, "equality of opportunity" is a magic phrase for Americans. Most Americans believe that there is more widespread opportunity for upward social and economic mobility in the U.S.A. than in any other place on the earth.

The Extent of Social Mobility in the U S A.

Social mobility is promoted in the U S A by three principal factors

(*a*) *Differential Birth-rates, between the Several Social Classes* The upper and upper-middle classes in the U S A fall far short of reproducing themselves. A hundred adults in these classes have about seventy-five children On the other hand, the urban lower classes practically keep births even with deaths, while the rural population more than reproduce themselves Hence there is a social vacuum which in each generation pulls many lower-class youths up into higher classes.

(*b*) *Expansion of Business and Industry* Great new industries developed in the U S A during the nineteenth and twentieth centuries lumber, meat-packing, flour-milling, steel-making, oil-refining, chemicals, electrical products, automobiles, aeroplanes, motion-pictures, radio, television Each new industry has created new positions of economic power and prestige, and demanded new people for these positions—people who mostly came from families at the middle- or lower-class levels.

(*c*) *Democratic Ideology* It is considered good to move up the economic and social ladder by virtue of hard work and ability Many of America's greatest men have done this. For example, Abraham Lincoln was born in a log cabin, the son of a wandering farm labourer. He went to a backwoods school only a few months, just long enough to learn to read and write He grew up in the hills of southern Indiana and the prairies of central Illinois as a wood-cutter, a boatman, and a clerk in a general store. He educated himself and became a rural lawyer. He went into politics He developed a good law practice He ran for the United States Senate but was defeated. Then, in a time of national crisis, he was elected President of the United States.

From this story and many more like it the youth of America have fed their minds. The United States of America means opportunity. Equal opportunity to all—that is America's promise. It is on the lips of every preacher and school teacher. It is taught at every humble fireside. Every businessman, industrialist, and politician proclaims it and believes it

However, there are limiting factors on social mobility in the

U S A., as in every structured society. First and foremost is the family, which tends to prepare its children for the same kind of life that the parents lead An upper-class family prepares its children for upper-class life, and passes on to them its upper-class position, as far as possible A lower-class family prepares its children for lower-class life, although it sometimes adds elements of preparation for social mobility

TABLE V

ESTIMATE OF UPWARD SOCIAL MOBILITY IN U S A

Social Class	*Percentage Distribution of Population*	*Percentage Distribution of Next Generation Without Mobility*[1]	*Net Social Mobility Required to Replace Reproduction Losses*	*Percentage of Mobility from Each Class*
Upper	3	2 4	—	—
Upper-middle	8	6 4	0 6	9
Lower-middle	35	30 5	2 2	7
Upper-lower	35	37 0	6 7	18
Lower-lower	19	23 7	4 7	20
	100	100	14 2% Net Mobility	

[1] Net Reproductive Indices as follows

U and UM	0 8	UL	1 1
LM	. 0 9	LL	1 3

Another possible influence for decreasing social mobility is the levelling-off of population The population in the U S A is now growing only slowly However, industrial expansion and technological change are probably sufficient to keep the social structure plastic even though population should reach a standstill

Although many people have predicted and proclaimed that social mobility and vertical occupational mobility were decreasing in the U S A, there is no evidence that this statement is true In fact, some simple social arithmetic based on differential birth-rates alone shows that there must be a considerable degree of upward social mobility in the U S A The results of such a calculation are shown in Table V. This table shows the distribution of the population to-day by social class, and the distribution of the next generation if present birth-rates remain in force Assuming that the proportions of people in each social class remain constant, there must be mobility upward to fill the gaps in the upper and upper-middle classes due to their failure to reproduce themselves. The extent of mobility needed is shown in the table. It amounts to as much as 20 per cent from the lower-lower class, and a minimum of 7 per cent from the lower-middle class. On the average, one person in

seven must be mobile upward to preserve the present distribution into the next generation The estimates of upward mobility in the table are conservative, for they do not take account of downward mobility, which does actually occur to an appreciable degree and must be offset by an equal amount of upward mobility.

Relation of Occupational Distribution to Social Class and Social Mobility

Social mobility in the U S A has a close relation to occupational mobility and social position is related to position in the occupational hierarchy

Two types of occupational hierarchy exist. First, there are different ranks of authority and prestige and income within an economic unit, whether it be a complex corporation with a hundred thousand employees or a simple farm or store with two or three workers Second, the various occupations are ranked in a hierarchy of prestige in the eyes of the people A banker is higher than a food-store-owner A lawyer is higher than a plumber, who, in turn, is higher than a truck-driver. The occupational hierarchy is related to income, but is not identical with a hierarchy of incomes For example, a " brain-work " occupation, such as bookkeeping, is higher in prestige than a " hand-work " occupation, such as bricklaying, although the latter often pays better Again, university teaching has about the same status as corporation law, but the latter pays more

In other words, occupational status is not identical with social status The two are related in such a way that change in occupational status usually results in change of social status after a period of time There is a high statistical correlation between occupational status and social status, highest in a stable society where there is little occupational mobility [1]

Table VI shows a number of the most common occupations in the United States ranked on a scale of 7, as developed by Warner and his colleagues.[2]

Vertical occupational mobility is usually a precursor to social mobility For example, a certain boy in a Midwestern city was the son of a carpenter The family was known as respectable, but poor It was ranked in the community as of upper-lower status. The boy did well in school, both as a scholar and as a leader among his peers. He finished the local secondary school and got a minor job in the office of a local mill There he " made good " and was promoted from one position to another in the hierarchy of

[1] The product-moment coefficient of correlation between occupational status and social status in a small American city was found to be about 0 90

[2] See W L Warner, Marchia Meeker, and Kenneth Eells, *Social Class in America* (Chicago Science Research Associates, 1949)

the mill. Eventually he worked up to the level known as "third man" in the parlance of the mill, meaning that he was third from the top. He moved his family several times during the period of his rise in status, each time to a more expensive house in a "better" neighbourhood. He was asked to join associations to which his father would never have aspired, such as the Country Club and the Rotary Club. His wife changed the style of furniture in their house. She joined the "best" women's club. He sent his daughter away to college. By the time he was 50, he was securely placed in the upper-middle social class of this community

In this case, occupational mobility provided money and position which the man was able to translate into social mobility. But if he had not changed his residence and joined associations of higher-status people, and if his wife had not changed the style of furniture and joined a higher-status women's organisation, the family would not have risen in the social scale.

Education as a Means of Occupational Mobility

Occupational mobility came readily to the bright and energetic youth of the nineteenth century, in an American society which was expanding in numbers and wealth, with technology and business operating at a relatively simple level. Consequently there was no demand for special training such as one could get in school and college except by people headed for the professions of law, medicine, teaching, and the clergy. Quite a number of poor but able young men did rise in the occupational scale by studying for the professions, but by far the greatest share of occupational mobility during the nineteenth century in the United States was gained without benefit of formal education.

The twentieth century has seen a marked change in the means of vertical occupational mobility. There has been a phenomenal increase in the numbers of people in the technical and service professions, such as engineering, chemistry, teaching, and Government service. These all require special training, and young people have streamed to the colleges and universities to get such training. Large business corporations have let it be known that they favoured university graduates for their positions that lead up to management levels. Furthermore, the lesser white-collar jobs have come more and more to be reserved for graduates of secondary schools. Although the secondary school does not train boys and girls specifically for most of these minor clerical positions, its diploma of graduation is taken by employers as proof that the secondary school graduate possesses the necessary learning ability and work habits to be able to get along on the job offered him. Employers seldom ask, "Who is your father?", but they always ask, "How far did you go in school?"

Consequently the American people have turned to education as

TABLE VI

SOCIAL PRESTIGE OF OCCUPATIONS IN THE U S A

Scale Value	*Professions*	*Owners and Managers*	*Landowners, Farmers, and Farm Workers*	*White-collar Workers*	*Manual Workers*	*Service Workers*
1	Doctor, dentist, lawyer, college teacher, clergyman (college education)	Executives of corporations, banks, investment in business of $100,000 +	"Gentleman farmer", large landowners, not supervising operation	Editor of reputed journal or newspaper, certified public accountant, executive secretary in high-status organisation, Government executive		
2	Secondary school teacher, clergyman (no college) veterinarian, *et al*	Assistant managers, branch managers, owners of business $25,000 to $100,000	Landowners, operators of large properties, active urban social life	Accountant, insurance, bond salesman, real estate in reputed firm, editorial writer		
3	Elementary school teacher, pharmacist, optician, embalmer, any unionised profession, trained nurse.	Managers of branch stores, buyers, salesmen with "good" connections, business investment $5,000 to $25,000	Owners and operators of good mechanised farms with labourers	Bank and broker's clerk, private secretary, county and civil official, railroad agent, senior postal clerk, newspaper reporter	Small contractor who works with his men	Airline pilot

4		Equity in business $2,000 to $5,000	Small landowner ("decent place"), operator of good leased land with labourers	Stenographer, bookkeeper, mail clerk, auto, book, clothing, dry goods salesmen, Government clerk	Construction, factory or mine foreman, carpenter, electrician, plumber, master mechanic, railroad engineer; painter, chef	Police captain, butcher, tailor, dry cleaner, pullman and railroad conductor.
5		Equity in business $500 to $2,000 with no employees	Tenant on good farms, owners of small farms who just "get by"	Drugstore, grocery, hardware clerk, telephone and beauty shop operator, dressmaker, practical nurse	Apprentice to skilled trade, railroad fireman and brakeman, timekeeper, telephone lineman, medium skilled factory worker	Policeman, barber, headwaiter, bartender, laundry agent, gasoline-station operator
6		Less than $500 equity	Sharecroppers, stable farm labourers, subsistence farmers working out at unskilled jobs		Semi-skilled factory worker, warehouse man, watchman, cook, janitor	Taxi and truck driver, baggage man, delivery man, waiter, waitress, gasoline-station attendant
7			Migrant workers, unemployed—no regular occupation		Labourer, unskilled miner, mill hand, scrub woman, migrant worker, unemployed — no regular occupation	Domestic servant but not butler or housekeeper, bus boys, unemployed — no regular occupation

the avenue of occupational mobility. The schools and colleges began to grow rapidly after 1890; within a period of fifty years, the proportion of young people attending secondary school (age 14–18) multiplied tenfold, and the proportion attending colleges and universities (age 18–22) multiplied three- to fourfold.

The American educational system is admirably adapted to serve as a means of occupational mobility. It is a "single-track" system, from the age of 6 to 14 or higher. The child who expects to go to the university sits in the same class and studies the same subjects as the child who will quit school and go to work at the age of 14 or 16. At no time before the age of 14 need a choice be made as to whether the child will pursue higher education. At about the age of 14 some boys and girls leave school and a relatively small number enter vocational courses in high school which would not admit them to a university For example, a boy at 14 or 16 may start to learn the automobile-repair trade, or a girl at this age may study beauty culture But the great majority at the secondary school level study English, mathematics, science, history, social studies, and foreign languages, and thus are eligible for entrance to a college or university at about the age of 18. Almost half of the boys and girls complete a secondary education course at about the age of 18 and could go on to a higher institution. About one-third of the secondary school graduates actually enter college or university.

Table VII shows how many pupils progress to various levels of the educational system.

Figure 2 shows how the educational system serves as a broad highway leading to the university, and how this avenue is blocked off for only a small minority of pupils.

Thus the educational system has become the most important element in the American system of opportunity for rise in the economic and social scales It serves to give a measure of reality to the American creed of equal and unlimited opportunity to all,

TABLE VII

THE EDUCATIONAL LADDER IN THE UNITED STATES

(Number of people out of every thousand who reach a given educational level)

Level	1940	1910
First-year high school (age 14)	850	310
Third-year high school (age 16)	580	140
Graduation from high school (age 18)	450	93
Entrance to college or other higher educational institution	150	67
Graduation from college (bachelor's degree) (age 22) . .	70	23
Master's degree	9	1 5
Doctor of Philosophy . .	1 3	—

which asserts that any person with ability and character can rise in the world "In the United States you can raise yourself up", the people say.

This use of the educational system as a highway for occupational mobility has not been without its critics. Many educators have thundered against what they call "vocationalism" in the colleges. They have decried the materialism of students who go to college to get a better job and to earn more money, rather than to learn more about the good, the true, and the beautiful. But their words have had little effect upon the goals which young people have in going to college

Possibly more effective in reducing the use of the American college and university for purposes of occupational mobility will be the current increase of attendance at these institutions, if it continues There has been a great increase in numbers of college and university students since the end of World War II—at least as much as 20 per cent above 1940 figures, after allowance is made for filling the gap caused by the war years in the education of young people This increase has had the blessing of President Truman's Commission on Higher Education,[1] which in 1948 recommended and predicted that one-half of the nation's youth should go to college for two years, and one-third for four years, instead of one-sixth and one-twelfth, respectively, as at present If so many were to go to college, there obviously would not be enough jobs at the professional and managerial levels for them, and many would have to take positions at the clerical- and manual-work levels

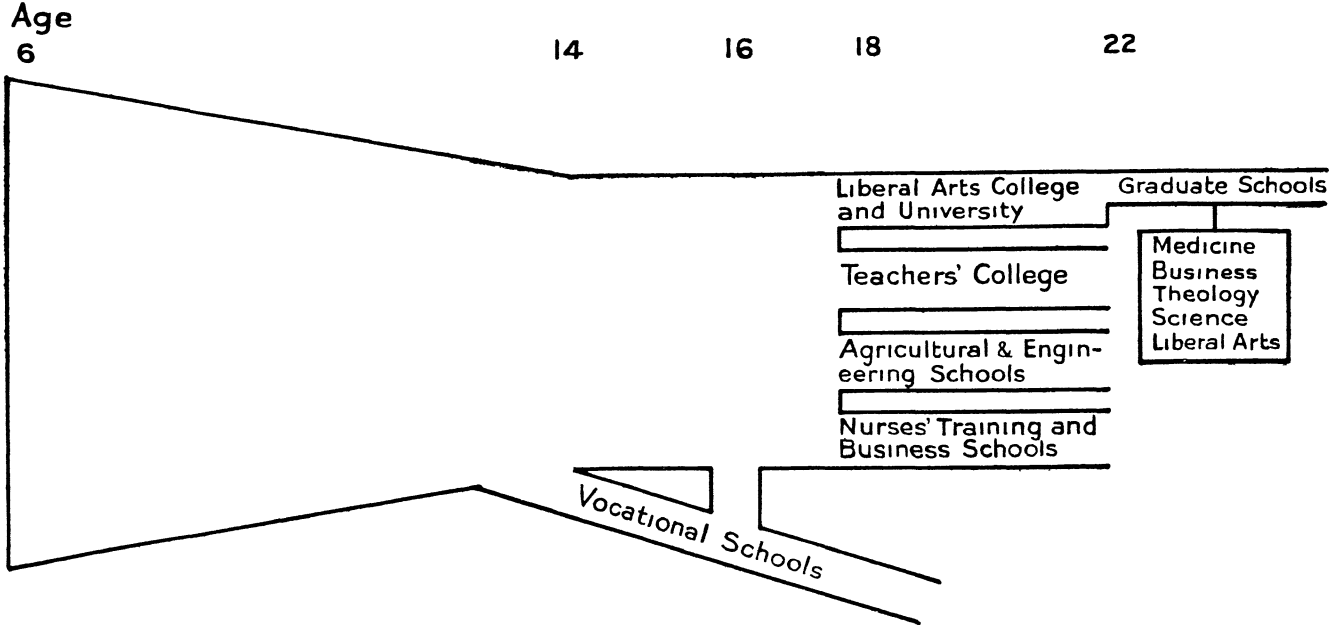
For some twenty years the "junior colleges" or two-year colleges of the country have been offering "terminal vocational training" for jobs at the semi-professional level, such as engineer draughtsman, policeman, bank clerk, and laboratory technician in hospitals or clinics Some of the junior colleges, which have tended recently to call themselves "community colleges", have more students in their terminal vocational courses than in their liberal arts courses While it might at first sight appear that this development was reducing the use of education for occupational mobility, the fact is that many of the students in the junior college vocational courses come from working-class homes and are seeking mobility into clerical and semi-professional occupations which will assist them to move up the scale towards lower-middle-class status

Thus it appears that the possible (but by no means certain) expansion of attendance at colleges in the U S A. may tend to alter the mobility-promoting function of the college without changing it basically In addition to serving as a means for occupational mobility primarily for lower-middle-class youth, as it has

[1] *Report of the President's Commission on Higher Education* (Washington D C., U S Government Printing Office, 1948)

Figure 2.

The Educational Highway in the USA.



during recent decades, it may also serve as a means for occupational mobility of many more youth, mostly from the lower classes, into the occupations which are mainly at the lower-middle-class level. Table VIII shows what the situation was in 1940, and what it may be in 1960 if the goals of the President's Commission on Higher Education are achieved. The writer does not believe that so great an expansion is probable, because of insufficient motivation of many able young people from lower-middle- and lower-class homes for occupational and social mobility. This will be discussed later.

TABLE VIII

COLLEGE ATTENDANCE OF THE VARIOUS SOCIAL CLASSES

A 1940

Social Class	*Percentage of Total College-age Group*	*Percentage of Children Going to College*	*Percentage of Total Age-group in College*
Upper and upper-middle	8	80	6 4
Lower-middle	32	20	6 4
Lower	60	5	3
	100	—	15 8

B 1960 (Prophecy)

(Assuming economic barriers removed and adequate motivation)

Social Class	*Percentage of Total College-age Group*	*Percentage Who Might Go to College*	*Percentage of Total Age-group Who Might Enter College*
Upper and upper-middle	8	80	6 4
Lower-middle	32	50	16
Lower	60	50	30
	100	—	52 4

Selection and Guidance for Occupations

A number of organisations and agencies take part in the individual's search for a vocation. In theory these organisations aid the individual in a choice which is his to make The American "ideal" in vocational choice is that of the individual freely choosing his occupation, in the light of his own abilities and the opportunities that exist in the various possible occupations. While this ideal is not realised in practice for many people, it continues to be the goal towards which the society aims in its arrangements for occupational guidance and choice

There are four institutions which play considerable roles in the

process of selection of an occupation—family, school, business or industry, and Government

The Family as a Guide to Occupational Selection

The American family tends to pass on the occupational level but not the specific job from parent to child There is relatively little direct inheritance of occupation, but there is definite inheritance of occupational level, with the important exception of the children who will be occupationally mobile.

The highest amount of direct inheritance of occupation is found among business leaders and among farmers. In these two situations the family usually has property and puts pressure on one of the sons to adopt the occupation of the father so as to look after the family property efficiently Taussig and Joslyn,[1] studying the paternal background of eight thousand American business leaders at about 1930, reported, "the present generation of American business leaders has been recruited in greater part from the sons of business men, and only to a minor extent from the sons of farmers and manual labourers . . The proportion of farmers' sons among successful business men is tending to decrease, and that of sons of business executives is tending to increase" They find that the fathers of 72 per cent of the business leaders were in business or professions.

Davidson and Anderson,[2] in their study of occupational mobility in a medium-sized California city, found that, of the business men and farmers in their study, 73 per cent had fathers in the same occupational category. No other group inherited its occupation to such a high degree. For example, of the professional men, only 10 per cent had fathers in the professions, while 61 per cent had farmers or business men for fathers, of the skilled workers, 39 per cent had fathers in the same broad occupational category.

These authors ascertained the degree to which sons took occupations on the same *general* level or adjacent levels as their fathers, with results shown in Table IX, where the occupations were grouped into six levels, and the percentages are given of sons whose occupations fall on the same level or are adjacent (one step above or below) to the fathers' occupational levels These data illustrate the generalisation that fathers tend to pass on their general occupational level to their sons

Business and Industry as Guides to Occupational Selection

American business and industry take in hundreds of thousands of new workers every year, assign them to jobs, and, in the

[1] F W Taussig and C S Joslyn, *American Business Leaders* (New York Macmillan, 1932, pp 234, 240)

[2] P E Davidson and H. D Anderson, *Occupational Mobility in an American Community* (Stanford University Press, 1937, pp 20, 24)

majority of cases, teach them how to do their jobs By far the majority of workers in America learn their job on the job This holds true for most workers in the great mass-production industries. Only a minority of workers learn a trade by apprenticeship and then carry their skills with them from job to job However, this minority is still a large number and an important element of the American labour force

With so many new workers being assigned to jobs and trained for those jobs by their employers, it would seem natural that the employers should take measures to guide workers efficiently into the kinds of work that they can do best. This is done by a number of large corporations, such as the American Telephone and Telegraph Company, and Sears, the mail-order and merchandising company Such companies use skilled interviewers as well as

TABLE IX

TRANSMISSION OF OCCUPATION IN A CALIFORNIA CITY

Occupational Level of Fathers	*Percentage of Sons on Same or Adjacent Levels*
Professional	61
Proprietors and farmers	60
Clerks	62
Skilled workers	74
Semi-skilled	68
Unskilled	72

aptitude tests to sort out their job applicants Since the first job assignment is not infallible, these companies maintain counselling offices where an employee who feels that he is a misfit on his job may come and talk over his difficulties and possibly shift to a different job.

Aptitude testing and assignment of workers to jobs on the basis of such tests, together with counselling about job placement, are recent innovations, and for the most part limited to a few large corporations which are attempting to stabilise employment and to make as efficient as possible a use of their workers' abilities.

Some of the larger corporations maintain their own schools for the training of some of their personnel One type of school is the apprenticeship school for the training of highly skilled craftsmen, such as machinists, tool and die makers, watchmakers, instrument makers, and glass-blowers. Another type of school is one for the training of sales people and executives. Such a school is operated by the International Harvester Company, which must train sales people for work all over the world, and managers for a wide variety of executive positions in factories. Schools of these sorts do a great deal of careful selecting and guiding of their students.

The Government as a Guide to Occupational Selection

The State and Federal Governments in the U.S A. have, since about 1930, assumed a certain amount of responsibility for occupational guidance. The several States provide an Employment Service, one responsibility of which is to guide workers into satisfactory jobs. The Federal Government maintains an Occupational Outlook Service, which studies occupational trends and forecasts the demand and supply of workers in various occupations. Certain States maintain Junior Employment Service offices in their larger cities, which attempt to guide young people wisely into their earliest jobs.

Recently the Federal Government has promoted a plan to expand two professions, those of clinical psychologist and psychiatrist, through recruiting young people for these vocations and paying for their training. This is a novel venture for the Government, and was prompted by the serious shortage of people in these professions for service in the hospitals of the Veterans' Administration, which cares for war veterans It has recently been proposed by a Government commission that the Government should set up a system of scholarships for boys and girls with scientific ability, starting at the secondary school and carrying them through their graduate training. While no action has been taken on this proposal, the fact that it has been made seriously may foreshadow a much greater activity by the Government in the selection and training of youth for occupations considered especially significant for the national welfare

The Schools and Occupational Guidance

There are several points at which boys and girls leave school for employment The first point is at the age of 14, which is the legal school-leaving age in about one-fourth of the States of the U S A Some 10 to 15 per cent. drop out of school at this age. The boys go to work on farms, or into the simplest kinds of unskilled work. Most of the girls go into housework in their homes At this age the school gives little or no advice about occupations The schools do not officially approve of children dropping out of school at this age, even in the States where it is legally permissible to do so. The schools expect boys and girls to stay in school until they are 16 or 18, and give very little assistance or encouragement to youngsters who quit school before this age.

For the great majority of young people who remain in school until they are 16 or more, the ages 12 to 15, or grades 7, 8, and 9, are a period of orientation to the world of work At this age the first broad vocational decisions are reached By the age of 15 most boys and girls know whether they want to go to college, although they may not know whether it will be financially possible for them to attend college. Most boys and girls by this age know

whether they prefer to work with their hands or with their brains

One type of school, the junior high school, was developed about 1910 partly as an aid to the occupational orientation of boys and girls aged 12 to 15 This is a three-year school, grades 7, 8, and 9, which took over the last two years of the elementary school and the first year of the high school in many cities which were expanding their school buildings about 1910 or 1920. The junior high school idea spread especially in the western part of the country, where population was growing rapidly Part of the typical junior high school course of study was a series of short courses for vocational orientation—e g courses in carpentry, metal-working, agriculture, home-making, business methods. It was planned that boys and girls should try themselves out in these various vocational courses, as well as in mathematics, foreign languages, and history, to find out what kinds of occupations they liked

This aspect of junior high school work has rather lost importance in recent years, as more and more young people have remained in school until they were 16 or 18, and as the work-pattern of American industry has moved toward mass production with little need for vocational training before one actually gets employment.

A vocational choice is demanded of boys and girls at about the age of 15, when they may choose between the standard "academic" course and several "vocational" courses. They may begin a "commercial" course in secondary school, leading to clerical work as stenographer, bookkeeper, etc ; or they may choose an agricultural course, training them for farming, or a home-making course training them for house-work or restaurant work, or an industrial arts course leading to the trades of carpentry, metal-working, printing, automobile repairing, etc.

Another age of vocational choice is about 18, when those who graduate from secondary school must decide whether to go to work or to go to college, and if to college, what kind of programme to pursue—whether engineering, liberal arts, business training, nurse's training, etc If the choice is liberal arts, leading to a profession, the specific choice among the professions may be postponed until about the age of 20, when it is necessary for the one going into a profession to choose among courses leading towards law, medicine, teaching, theology, science, etc.

The occupational choices which must be made become increasingly specific at later ages. The first choice, made at 14 to 16, is between hand work and brain work Later choices narrow down the field until eventually the individual chooses the specific occupation which he will attempt

There are both formal and informal guidance and selective procedures in the schools during these years The formal procedures consist of courses describing occupations and of aptitude tests and interviews with counsellors. Some secondary schools

offer courses in "occupations" at the tenth-grade level, when a good many boys and girls reach the age of 16 and leave school. Other schools offer this course at the twelfth-grade level (18 years) The courses are nearly always elective, which means that they are taken by large or small numbers of pupils depending upon the enthusiasm of the school administrator for the course and depending on the popularity of the teacher of the course.

In a few of the large cities the school system operates a Junior Vocational Guidance and Placement Service, which undertakes to advise pupils about occupational choice, to place them in part-time or full-time jobs, and to keep in touch with them until they have found a satisfactory kind of work It is unsettled whether the Junior Placement Service should be a part of the school system or a part of the State employment service Both patterns are being tried. There still are many cities and States which have little or no employment service for young people under 18.

The informal guidance and selective procedures are probably more common and more pervasive in most places than are the formal procedures. To see such procedures in operation let us consider an elementary school in a certain New England city In the elementary schools of this city each class is divided into three sections A, B, and C, according to the ability of the pupils The ability of the child was judged by the teachers The children were also given an intelligence test The superintendent of schools once said that the A section was for Hill Streeters (upper class), B for the middle group, and C for the Riverbrookers (lower class) However, Greer, the principal, says

> That is the very thing it wasn't. If we had put in anything like that we couldn't have kept it for more than ten minutes I have been very careful to explain to everyone that there is no division on social bases and that just as many children from the poorer classes are in the A groups as in the C groups.
>
> When we first put the system in a good many parents came up to find out why their children were in the C group and I told them all it meant was that they were being taught the same material in a slightly different fashion and that they all would do the same work whether they were in the A, B, or C group The kids had no feeling whatsoever about being in A, B, or C There is no social grading connected with this system Parents would have raised hell if there had been a Hill Streeter-Riverbrooker distinction

However, when asked specifically whether the C group was from the lower economic levels he said most emphatically

> Yes, the A group is highest in that respect, but the B group includes in its extremes children who might belong to either A or C groups. The B group includes some characterized by the metaphysical concept of mental laziness They have the brains but they don't work hard The B group also includes those who would be in the A group in a grade below but would flunk if put in the A group of the present grade Finally, it includes hard workers from the C group.

Greer thinks that this A, B, C system prevents children from becoming misfits and keeps them from causing a lot of trouble. He gave one instance of a boy who was in the fifth grade and was not in the right group "Since the work was beyond him all he did was raise hell. He was shifted into C section and now he is perfectly happy" He said it was ridiculous to think that the only bright children came from Hill Street In the first place, the Hill Streeters have given up having children any more and he doesn't think there are many from Hill Street in the school There are plenty of Riverbrookers who are bright, two of his brightest pupils, with the highest I Q s in the school, are Riverbrookers No one in this part of town has any idea that there is a distinction on the basis of Hill Street and Riverbrook They all understand that the children are getting the same work

Mr. Greer is certain that (*a*) the children are ranked in the sections on the basis of ability and (*b*) higher-class children are generally more able than lower-class children, so that there really is Hill Streeter–Riverbrooker difference He means that the judgement of ability is primarily a social class judgement and those children who conform to middle-class standards have ability

If we look at Table X, we can see how this judgement operates in the eighth grade.

TABLE X

EIGHTH GRADE—DORLAND SCHOOL
(Distribution in Sections by Social Class)

	Section		
	A *Per Cent*	*B* *Per Cent*	*C* *Per Cent*
Upper-middle	12	—	—
Lower-middle	12	14	9
Upper-lower	44	36	—
Lower-lower	32	50	91
	100	100	100

The sample is not large enough to make any distinct differentiations, but the facts that the upper-middle-class students are all in Section A and that Section C is so predominantly lower-lower class are significant in showing that the lower-class children do not tend to participate with those above lower-middle.

The teachers show their feeling that the sections are status groups. Greer, in talking about the A, B, C arrangement, said

> The teachers were dreadfully upset when they knew that this was going on, worrying for fear they would get a C group or such, but I did not tell them what kind of group they were going to get until about two days before the end of the school year because I did not want any

trouble with the teachers When one teacher learned that she was going to get a C group she wept, said she hated it, but now is perfectly contented and pleased and would probably do anything I want her to This year I am going to make some changes and I do not intend to tell the teachers until the last moment One day I saw another teacher in the hall before we had assigned groups and I started kidding her, asking her how she would like a C group, since she had had so much training in the manual arts, and she blew up and swore she would never take one The children have no feeling against being in a C group, but the teachers feel—or did feel—that it degrades them

Mr. Greer is proud of having instituted this system in Yankee City and wants it adopted in all schools. He says that the section system is based on the principle of "giving more individual attention". It seems, however, that the section system here functions so that the lower academic status of C section contributes to the lower social status of the lower-lower class

The grammar school principal acts as a sieve in selecting the students for the various high school courses In a predominantly lower-class school this is a difficult job, for it almost amounts to persuading the children to ignore the two highest-status courses in the high school In Table XI we see the selection of high school courses by the students themselves

TABLE XI

EIGHTH GRADE—DORLAND SCHOOL
(Student Selection of High School Course)

	Section		
	A	*B*	*C*
High School Curriculum			
Latin and science	15	—	2
Commercial and general	11	31	25

The principal says

The general course is just a course for kids who will dig ditches The taxpayers will kick someday about continuing that course (About the commercial course group, he says) The course is tough work, the A group kids will walk away with honours, however, and only the cream of the C group are in here.

About the two in the C group who elected the Latin course, he says, "My job is to change this"

"For the Latin and scientific curricula", according to this principal, "a student must have great industry, but more important is that he be good in English, also in maths, but he must be good in English. They have to take Latin, French, and German also in these curricula."

Mr. Greer does this job of "changing minds" about high

school courses by giving talks to the children in groups and by individual conferences. He described it thus

> At the present time I am endeavouring to do something with the graduating grades for their future life vocationally. You know the vocational-professional proportion is about 92 per cent to 8 per cent., but our schools are training the whole 92 per cent. as if they were to be members of the 8 per cent. professional class I am giving all the groups A, B, and C a talking to, explaining the disadvantages of the white-collar job to all of them
>
> It is surprising how many people in 8C want the prestige of a white-collar job So I point out how poor the pay is and endeavour to point out how hard it is to fit oneself for such a job and to make a success of it, the majority of them are unfitted for any such work
>
> It is singular how many girls want to be teachers and nurses It is strange that they do not, in this age at least, have any desire to become a stenographer, their great aim is to be a teacher or a nurse Whenever I find girls who want to become nurses I describe to them just exactly what they would have to go through before they could become a regular nurse, telling them that they would have to scrub floors and that sort of thing at the beginning, and I go into all the gory details I think this desire to be a nurse is due to the sort of romantic ideal of nursing which the girls of this age develop Obviously the whole urge toward becoming a teacher is due to the system of education which they undergo, which, in itself, is adapted only to make more teachers This educational system is a terrific waste of money and time to the city, since so few people can by any chance become members of the white-collar class and so many must follow some vocational line
>
> I've got to look after the eighth-graders because they will shortly graduate and be thrown on their own resources, either to go to high school or to work, and it is my business to see that they get some conception of what they are fitted for or what they can go into I explain to them about the courses which are given in the high school, just what they are going into and what the courses and the systems of study really mean [1]

Thus the principal acts informally to discourage those who he thinks have poor chances at social and occupational mobility and to encourage those he thinks can "get ahead" by means of education

Of course, this particular school principal may not be representative of all elementary school principals in his attitude about the social mobility of his pupils. But every principal acts to guide pupils into some courses with vocational implications and away from other courses with different vocational implications.

Another informal occupational guidance procedure lies in the "identifications" pupils make with teachers, club leaders, and other young adults whom they meet during their adolescent years. Adolescent boys and girls often become closely attached to young adults of either sex, as part of the process of breaking the ties of emotional dependence on their parents and transferring their emo-

[1] W. Lloyd Warner, Robert J Havighurst, and Martin B Loeb, *Who Shall Be Educated?* (London Kegan Paul, Trench, Trubner & Co Ltd., 1946, pp 75–79).

tional capital, as it were, to the marriage relationship with someone of their own age Their attachments to attractive young adults are nearly always healthy, though also quite unrational One consequence of such an attachment may be a decision to follow the vocation of the person to whom the adolescent is drawn. How many girls have decided to become teachers of French because they were taught by an attractive teacher of French at some time during their adolescence? How many boys have decided to become chemists because they had a club leader who was studying chemistry in the university?

Examinations as Means of Occupational Selection and Guidance

Five types of examination are used for occupational selection and guidance purposes

(1) *Tests of Occupational Knowledge and Performance.* Such tests are frequently used by employment-service staff to find out whether an applicant has enough knowledge or skill in a particular occupation to warrant placing him on a job For example, a brief test of knowledge of tools used in carpentry may be given to find out whether an individual should be assigned to a job as a carpenter or as a carpenter's helper A test of performance is often used in employing stenographers, in which a potential employee is asked to typewrite a short piece, and the speed and accuracy are noted

(2) *Tests of Aptitude for a Given Occupation* The aptitude type of test is used to determine whether an individual will profit from training for a given occupation, and whether he will probably learn a given occupational skill quickly For example, a test of finger dexterity is often used to select people for factory jobs which require rapid and accurate hand and finger movements Again, a test of clerical aptitude (working with numbers, etc) is used to select people for office jobs Aptitude tests are sometimes used for selecting individuals to receive training in music and the graphic arts

(3) *Personality or Temperament Tests.* Simple questionnaires concerning likes and dislikes, and sources of anxiety and frustration, are occasionally used to select and assign people to occupations for which they are temperamentally best fitted. It is argued that a given type of work, such as a repetitive job on an assembly line, will be suited to certain temperaments, while another type of work, such as selling to customers in a retail business, will require a different type of temperament

(4) *Interest Inventories.* Two kinds of interest inventories are used in occupational guidance and selection. One type asks about interests directly connected with the job. For example, the individual is asked whether he likes outdoor or indoor work, whether he likes dealing with people or with things, whether he likes selling

or making things The other type of interest inventory, of which the Strong Vocational Test is the outstanding example, asks a wide variety of questions about likes and dislikes of all kinds. Questions are asked concerning the subject's likes and dislikes of various kinds of people, various kinds of amusements, various kinds of political activities, and so forth. The test has the appearance of an inventory of personal likes and dislikes. This test is standardised on successful adults in various occupations, and characteristic patterns of likes and dislikes are found for each of a large number of occupations. The individual taking the test gives his own pattern of likes and dislikes, which is compared with the standard patterns His pattern will be similar to certain of the standard patterns, and he is judged to be a good candidate for the occupations represented by these particular patterns

(5) *Intelligence Tests* Tests of intelligence or learning ability are often used for occupational guidance and selection They are used by employers who are looking for alert young people quick to learn They are used in schools to select the pupils who should be encouraged to go to college and prepare for the professions. One type of intelligence test is called frankly a " scholastic aptitude test ", and is designed to select the pupils with the greatest aptitude for further scholastic progress Another type of intelligence test, known as the Primary Mental Abilities Test, contains subtests for six different mental abilities—vocabulary, number ability, word fluency, inductive reasoning, memory, and spatial imagery Patterns of scores on these sub-tests give a profile of abilities which can be related to the characteristics of various occupations. For example, to be an architect one should have high spatial imagery and high number ability. To be a lawyer or a clergyman one should have high word fluency and a large vocabulary

Examinations for vocational selection and guidance are used by a variety of agencies Principal users are the schools and colleges For *selecting students* from among those who apply for admission, most privately supported schools and colleges use some kind of test, supplemented by interviews with the candidate and recommendations from people who know him The tests are usually of the scholastic-aptitude sort, aimed at predicting the candidate's academic success in school or college. The trend is towards a greater use of aptitude tests and a lesser use of tests of specific knowledge. This allows for a wide variety of school experience among the candidates, and attempts only to find out which of them are most capable of rapid learning.

For entrance to medical schools an especially rigorous examination procedure has been developed by co-operation among a number of medical schools. These schools have five to ten times as many applicants as they have places. They scrutinise the candidate's previous school and college record carefully, secure confi-

dential estimates of him by adults who know him, and give him aptitude tests

The College Entrance Examination Board, representing a number of the more selective privately supported colleges and universities, gives entrance examinations over the subjects of the ordinary academic secondary school courses, and also a scholastic-aptitude or intelligence test. The colleges are tending to rely more and more upon the aptitude tests and less on the tests of knowledge in specific subjects in their choice of students

The largest State-supported colleges and universities do not use entrance examinations for admission purposes, but admit all secondary school graduates who apply, providing they have taken at least a prescribed set of "academic" courses in secondary school, such as English, history, science, and mathematics, which make up about three-fourths of the secondary school programme.

Examinations have been used for a long time to admit young men to the two military service academies which train officers for the army and the navy. Candidates for these positions are nominated by congressmen of the Federal Government, but must pass rather difficult entrance examinations in order to gain admission. During recent years a number of congressmen have based their nominations upon the results of examinations taken by all applicants in their own election districts.

Civil-service examinations are used by the Federal Government and by the several State governments and by a number of city governments to select people for positions in Government offices, post office, police departments, fire departments, and welfare services Usually these examinations consist partly of questions related to the work for which the examination is designed and partly of a record of past training and experience

Most civil-service positions are open only to people over 18, and they do not influence young people's selection of their first regular employment.

A number of large public school systems require all prospective teachers to take examinations, and employ teachers in the order of their standing on the examinations Examinations are also used for promotion to administrative positions in the schools of some of the larger cities, where the procedure is generally to combine a written examination with an oral hearing before a board of examiners

The several States require licences of practitioners of certain trades and professions which are essential to public health, safety, and morality. For example, licences are required for the practice of medicine, dentistry, law, for barbers, morticians (embalmers), beauty-treatment operators, plumbers, and electricians. Examinations are generally given to applicants for such licences by State boards of examiners.

Of all the examinations used for occupational selection and guidance, the several kinds of intelligence and scholastic-aptitude tests are most widely and least critically used in the schools Critics of these particular tests have recently warned against the indiscriminate use of intelligence tests to determine which children shall be encouraged to finish secondary school and go to college.

The reason for caution in using intelligence tests as a basis for giving children differing degrees and different kinds of educational opportunity is that most existing intelligence or scholastic-aptitude tests favour children of the dominant social-class culture and discriminate against children of the subordinate social classes.

Without fully realising what they were doing, most intelligence-test makers have selected the problems for their tests from the experience of their own class In the U S A , the test makers and the teachers are from the middle classes, and the tests are drawn from middle-class experience Words used in a vocabulary test, for example, are words in the standard middle-class vocabulary Many of these words appear very seldom in the standard lower-class vocabulary—such words as *symphony, bouquet, mentality, concede, legend,* and *asset.*

A test so constructed may be good for selecting the abler children from the social class to which it is adapted, but it may fail to select children from another social class who have equal ability to learn and to meet new problem-situations

This difficulty may be avoided, in theory, either by creating a test which is equally strange to the experience of all who take it, or by creating a *culturally equalised* test, one which is equally familiar to the experience of those who take it Probably it is impossible to create a test which is equally strange to a variety of cultures, since the very idea of testing is itself stranger to some than to other cultures. But it is conceivable that a culturally equalised test can be made for use in two or more social-class cultures in a given society, since the several social classes share a good deal of common cultural experience.

Summary of Factors in Occupational Selection and Guidance

In general it may be said that the individual has a relatively large responsibility for selecting and preparing for his occupation in the U.S.A. The family, industry, Government, and the school do give some assistance, but usually within the limits of a concept of the individual as responsible for his own occupational destiny. However, there are limitations on the individual's choice, chiefly imposed by his social-class position, and by his own interests and abilities.

The result of this situation is that occupational choice appears to be very largely a matter of trial and error in the U.S.A., and

that there is general social approval of a person's trying several occupations before he settles down to one of them.

Somewhat opposed to the trial-and-error feature is a growing emphasis on scientific tests of occupational aptitude and scientific methods of occupational guidance. This emphasis is brought to bear on the individual mainly through the educational system, although industry and the Government also exhibit it to a limited extent. Since the close of World War II, the Veterans' Administration has developed a very large programme of vocational guidance for men and women who were in the armed services.

Up-grading, Mobility, and Leadership

There are four principal methods by which people move up the occupational ladder in the United States

(1) *Competition with Peers* This is by far the most frequent means of securing occupational promotion in business and industry, and it is reasonably common in some of the professions. It is found wherever there is a hierarchy of jobs, as in a business office, an industrial corporation, a factory workshop, a university faculty, a city school system, a Church denomination.

(2) *Getting Special Training.* Frequently promotion goes to people who take the time and trouble to get special training They may take advanced work in a university This is often done to win promotion in the teaching profession, and in research laboratories Or they may take special training given by an organisation, such as an industrial corporation, for its employees Scholarship grants won in competition often give young people a chance to get knowledge and skills that will place them higher on the occupational ladder There is an increasing number of such competitive scholarships. The National Scholarships offered by Harvard University are a well-known example, and almost all privately supported colleges and universities offer at least a few competitive scholarships. Recently the Pepsi-Cola Corporation, makers of soft drinks, have established a nation-wide competition for four-year scholarships to college The Westinghouse Electric Company supports an annual Science Talent Search, in which the leading secondary school science students compete for scholarship awards.

At a more advanced level, there are fellowships offered by the several Research Councils for research work, as well as the Rhodes Scholarships, and the Guggenheim Fellowships are offered to distinguished young scholars and artists.

Education plays a substantial part in helping people get ahead in their occupations in competition with their peers, within the professions and in the large corporations. It does not play much part in occupational advancement among manual workers.

(3) *Gaining Admission to Restricted Occupations.* There is a small number of occupations to which entrance is rather strictly

limited, and for which people are carefully selected. Once a person gets into such an occupation, promotion tends to be based more on seniority than on competition Examples of such occupations are the armed services officers' corps, the diplomatic corps, certain religious orders, the medical profession, and many trade unions. These occupations all have in common a rigorous system of selection, often with an apprenticeship or learning period during which some candidates drop out. To some degree they also have competition for status within the occupation, though this competition is subordinated to the principle of seniority except in unusual times For example, war tends to place competition above seniority in the practice of promotion in the armed services

(4) *Inheriting a Position* Relatively few people in the U S.A inherit an occupation Almost the only occupational positions gained by inheritance are farm ownership and business ownership Professions are not inherited, though a lawyer or a doctor occasionally takes his son in with him and attempts to " pass the business on " to him.

Farmers and business men do pass on their property often to their children, and the property carries an occupation with it In such cases, the son usually works for a while at a relatively low status in the occupation If his father is a farmer, he may work as a farm labourer for a time, or he may rent a farm, gradually learning the business which he will inherit Similarly the son of a business owner may work as a sales clerk in his father's shop, or as a minor executive in his father's organisation, until he has gained enough experience to step into his father's shoes It is to be noted that working at a subordinate level in a business one will later inherit does not change a person's social status Having the social status of his father, the son may hold an occupational position of rather low status for a time, but it is generally understood that he will " succeed the old man " and he continues to enjoy the same social status as that of his father.

What Makes a Person Mobile?

Social and occupational mobility are best seen as the results of learning. A boy or a girl learns to climb the ladder of status If he is to be capable of moving upwards, he learns the social habits of the group into which he will rise, by associating with the people of that group and consciously or unconsciously imitating them The school plays its part by providing a stage on which the youth can try out his new roles with sympathetic coaching from teachers and other pupils.

Vertical occupational mobility, and the social mobility that is often consequent upon it, come to persons who possess certain definite personal characteristics Some of these characteristics are·

(1) *Talent.* Outstanding ability at music, art, science, dramatics,

athletics, will win status for people. In the case of women, beauty is often useful for mobility, through marriage to men who are higher in the social scale

(2) *Occupational Skills and Knowledge.* Possession of the skills and knowledge that are useful in a higher occupation obviously helps a person to move up the occupational ladder.

(3) *Social Skills.* Mobility up the occupational ladder is often dependent upon the acquiring of the manners, the language, the dress, and the tastes of a group that is higher in the social scale The usefulness of social skills is shown clearly in the following accounts of interviews held by a scholarship examining committee with two 18-year-old boys Both boys were in some financial need Both had been strongly recommended by their school principals. One boy had a lower-class family background and manners, while the other boy had a middle-class family background and manners The latter boy's family had been financially unsuccessful The interviewing committee consisted of a man and a woman, both middle class The interviews took place in 1943.

JOSEPH WARDINSKI

The boy came into the interview wearing a blue shirt open at the throat and a sweater He had a large wad of chewing-gum in his mouth, so large that it gave the impression of being a chew of tobacco He was obviously ill at ease, and he stood uncertainly until he was asked to sit down

His father has a shoe-repair shop and makes about $2,500 a year Joseph is the only child, and his father and mother as well as his unmarried uncle are prepared to help him get further education In high school he has worked hard, and he has a rather good scholastic record, easily in the upper tenth of the senior class He has no clear concept of what vocation he wants to follow When asked what he proposed to do, he said that he might go into law or chemistry He said that his mother wants him to be a chemist because "he always liked to mix things when he was a child"

One of the persons who interviewed him for the scholarship was a woman When the interview was over and he arose to go, the male interviewer shook hands with him, whereupon Joseph offered his hand to the woman, who had remained seated In the discussion which followed his leaving, both interviewers commented on his "crude" manners and on his failure to have any clear thoughts about his vocational future The woman also remarked that certainly his family could look after him and see him through college if they wanted to.

HENRY WEST

This young man came to the interview very neatly dressed, wearing a suit and white shirt and a necktie His hair was neatly combed While somewhat shy and diffident, nevertheless he seemed to feel at ease, and he went through the customary formalities of the introductions without difficulty

His father and mother are both college graduates, and they are both working now His mother teaches in a rural school, earning $1,400 a year, and his father earns only $1,500 a year in a direct-mail-advertising business Probably his father has some physical disability Henry's

vocational goal is engineering, and he defended this goal in questioning by pointing out that he had done his best work in maths and science in high school Also, he said that two or three faculty members had advised him favourably toward engineering He has decided to go to the State university partly because it is cheaper, and partly because he has friends there His grades in high school have been well above average, though hardly in the upper tenth He has been a class officer and an athlete, though not an outstanding one

He talked easily during his interview When it was over, the male interviewer shook hands with him, and the boy then bowed to the lady, who had not risen In the ensuing discussion the lady started out by saying "He deserves everything we can give him" Actually the boy has about the same intellectual equipment and about the same financial backing as Joseph Wardinski The difference between the two seems to be almost entirely a matter of social background

The American secondary school is especially useful for teaching lower-class boys and girls the middle-class social skills, since the teachers are almost entirely middle-class, and the most popular students are almost always middle-class. The lower-class boy or girl who is happy and successful in high school usually learns middle-class social skills, and thus lays a foundation for later social mobility.

(4) *Ambition* A drive to "get ahead" in life is usually present in upward-mobile people They are so set on gaining the future rewards of higher status that they can forgo present rewards which might come from spending one's money, "taking life easy", and enjoying the present moment to the full The mobile person usually shows a tremendous ability to sacrifice rewards in the present in favour of rewards which he anticipates in the future

(5) *Emotional Coldness* Since the mobile person must be on the move, often leaving his family and his old friends behind him in order to make new friends in his new status, he tends to be emotionally cold to people His emotional ties to other people are strong enough to permit him to make friends, and to marry successfully, but not so strong as to tie him down to his parents and his earliest friends. His path is often one of abandoned, if not actually broken, friendships It is for this reason that the successfully mobile person is seldom a lovable character, though often an admirable one.

Barriers to Upward Occupational Mobility

The principal barriers to upward occupational mobility are the following

(1) *Finances* Many people are too poor to buy the kind of education that would help them to rise in the occupational scale. While secondary education as well as elementary education are tuition-free in the U S A , and all States and many large cities have tuition-free universities, still it does cost money to get an education. There is the direct cost of books, laboratory fees, gymnasium

clothes, pencils, paper, class sweaters, rings, pins, and other insignia, photographs for school year books, diploma fees, graduation announcements, and so on A study made in 1940 showed that the average cost of such things, plus lunch, if necessary, was $125 for a secondary school student. In addition there is the loss of income due to the fact that a youth is not working and earning money when he is in school or college There is a definite relation between parental income and college attendance. For example, a study was made of the 1,023 students who had I.Q s of 117 or

TABLE XII

RELATION OF PARENTAL INCOME TO FULL-TIME COLLEGE ATTENDANCE OF SUPERIOR MILWAUKEE HIGH SCHOOL GRADUATES, 1939

Parental Income	*Percentage in College Full-time*
$8,000	100 0
5,000–7,999	92 0
3,000–4,999	72 9
2,000–2,999	44 4
1,500–1,999	28 9
1,000–1,499	25 5
500–999	26 8
Under 500	20 4

above and graduated from secondary schools in Milwaukee, Wisconsin, in 1937 and 1938 Table XII shows that the proportion going to college increased with increasing family income.

(2) *Low abilities*

(3) *Sex* The female sex suffers certain restrictions on occupational mobility because women are discriminated against in many occupations. On the other hand, women can rise and do rise often by marrying men who are occupationally mobile

(4) *Colour* Negroes and other dark-skinned groups are the objects of discrimination which makes it difficult for them to enter certain occupations or to rise to the higher positions in other occupations This is not generally regarded as right, and the dark-skinned groups are currently getting more opportunities for upward occupational movement

(5) *Low Social Class.* People of the lower social classes tend to find upward occupational movement difficult because (*a*) their lower-class social habits stand in their way, (*b*) their lower-class occupational expectations often satisfy them with positions of relatively low status.

(6) *Lack of Motivation.* To rise in the occupational scale for most people requires effort and self-sacrifice It requires planning ahead, saving money, studying, and doing many things which are

not intrinsically pleasant. Consequently a rather high level of motivation or drive is necessary to carry a person up the occupational ladder. Many people possess the intelligence, even the talent, that would make upward mobility possible, but they lack the motivation that would be necessary.

This is, in effect, the principal barrier to occupational mobility in the U.S A., for the financial barrier has been lowered by opportunity to earn money and support oneself in school and college, or, when employment for young people was scarce, by Government scholarships. Rough estimates have been made by the writer and some of his students of the extent to which poor but able young people would go to college if given financial assistance At present, about 80 per cent of the children of upper-class and upper-middle-class families go to college In these classes the financial factor is not highly significant as a barrier. Of the lower-middle class, some 20 per cent go to college It is estimated that another 30 per cent have sufficient ability to get along in an American college, but only about half of this group has sufficient motivation to do college work if the financial barrier is removed Of the lower class, some 5 per cent now go to college It is estimated that another 45 per cent have sufficient ability to "make good" in college, but again, no more than half and probably a smaller fraction would take advantage of financial assistance which would enable them to go to college Hence the figures in Table VIII, which estimate the probable increase in college attendance if economic barriers were removed, are probably grossly exaggerated

(7) Another barrier to occupational mobility is a strong motivation directed towards a low-status occupation, such as farming or manual work of some other kind

Sources of Leadership

Leadership in the American society is partly a product of inherited social position, and partly a product of individual ambition and mobility. President Franklin D. Roosevelt was an example of leadership that originated in family social position. Any member of his family was bound to have social prestige and financial influence, with which he could easily exercise at least a small degree of leadership In this particular case, Franklin Roosevelt developed individual ambition which, with other qualities of personality, made him an outstanding leader.

Abraham Lincoln became a leader without assistance from family social position. There is no arbitrary rule preventing the emergence of leaders from any social group in the American population. But middle- or upper-class social status is of some assistance to the rise of a leader.

It is accurate to say that the emergence of leadership is mainly unplanned in the U.S.A The institutions of the society—its free

schools and colleges, its ideology favourable to upward occupational and social mobility, its free political and economic institutions—do not unduly impede the rise of able people to positions of leadership.

There have been some efforts at the planned production of leaders, and probably these will be increased. The kind of leaders whose production is planned are mainly in the professional occupations—research scientists, engineers, physicians—and these are not so much leaders as experts A modern industrial society needs experts to improve those processes which are scientific at base, and consequently the society offers scholarship grants to attract young people to these positions But the positions of leadership in politics, business, and religion continue to be occupied by people who have emerged from the common run of men in the competition and co-operation of American life. Some of the large corporations have established "executive training programmes" which take young men just finishing college and give them a two- to four-years programme of training within the corporation to teach them all aspects of the business before they are put into executive positions

The schools and colleges are expected to train experts to man the many important posts of a modern industrial society. Not in the same explicit sense are the schools and colleges expected to find and train leaders. But the leaders are expected to have gained a great deal from school and college.

General Summary

In the United States of America, as compared with other nations in the twentieth century, we see a class-structured society with relatively high fluidity and social mobility. The social structure and the social institutions of this society are sensitive to changes in the occupational distribution, and changes in the occupational pattern occur rapidly under the impact of technological advance. Yet this American society is far from chaotic. It has a structure which enables a family to rise to a high social position by effort and then to remain there for several generations.

Education in the United States is by far the most important avenue of upward occupational and social movement. In the schools and colleges takes place the selecting of boys and girls for upward occupational mobility and the training of them for it. These schools and colleges also teach, informally, the social skills and habits which are necessary for upward social mobility.

ROBERT J. HAVIGHURST.

CHAPTER TWO

CANADA

THIS is an intriguing problem, to estimate the effect of many different factors which help determine the ultimate vocation of Canadians. The present treatment of the subject can be neither precise nor exhaustive. Much research is needed in Canada to provide exact data on some of the more obvious factors, such as parental influence, and even a lengthy study might fail to disclose more subtle forces, such as those inherent in national, community, or family history. Nevertheless an attempt will be made to deal, however inadequately, with a representative variety of factors related to the social environment, to education, and to the personal qualities of the individual

The factual material in this article was gleaned chiefly from the publications listed in the bibliography at the end. In many specialised fields both information and advice were provided by colleagues, friends, and other good Samaritans in the role of psychologists, sociologists, personnel officers in business and government, and administrators of pertinent branches of education and related services Since the article covers a broad expanse of rather uncertain territory, it will perhaps be a kindness to make no more definite acknowledgements, in order that necessarily hazardous statements may be attributed only, and fairly, to the author's temerity.

Geography and Economics

One determining factor in the occupational placement of Canadians is the very obvious fact that they live in Canada and must be distributed vocationally in about the proportion that the economic pattern of the country demands at the time There may be room in a particular occupation to accommodate a few more enterprising persons without displacement of others, but the latitude is small. One chief reason, therefore, that about 30 per cent. of gainfully employed workers are engaged in agriculture is simply that the Canadian economy is agricultural to about that extent. The economy is changing, it is true, and the changes are partly due to vocational aspirations. But for Canadians seeking occupational placement the existing distribution of vocational opportunities constitutes a frame of reference to discipline personal desire. To illus-

trate if young Canadians at school could have their way regardless of the economy, nearly half the population would soon be engaged in certain professions with intrinsic appeal and hardly any would be working at the routine labour of production, but the sheer impossibility of such a distribution creates counter-forces which compel the less fortunate, gifted, or determined to change their minds

Table I on page 341 shows the percentage distribution of gainfully employed workers in Canada classified in social-economic groups. Data for two census years are given to show trends, and a breakdown by sex is included for later reference Although this social-economic classification is more useful for our present purpose, it is a relatively new departure, and Table II on page 342, giving the distribution by occupation groups, is needed to show trends over a longer period These tables show a marked decline in the percentage of Canadians engaged in agriculture and a small gain in the number employed in two other primary industries, logging and mining Employment in manufacturing is up, and later figures would show an even greater increase due to the marked industrial development in Canada during and since the last world war Nevertheless, since the productivity of industry has increased much more rapidly than the number of industrial employees, there has been an even greater gain in the number of those engaged in distribution and service occupations, including transportation, trade, finance, and professional services In the social-economic grouping the most impressive decline is seen in the number of independent proprietors, a reflection in part of the growth of large businesses and corporations Even greater changes have occurred within the subdivisions of the occupations in Table II. Our point at present, however, is that the geographical fact of being a Canadian sets, and will set for the immediate future, approximate limits of employment possibilities suggested by these tables

A disturbingly large number of Canadians have escaped this national or geographical limitation by emigration to the United States Between the census years 1901 and 1931 the loss of Canadian population to our great neighbour was 102 per cent. of our natural increase and 70 per cent of our accretion by immigration into Canada. During the great depression and the Second World War this egress to the United States was halted, but recently it began again. It is the more costly because the attractions of higher remuneration, greater scope, and opportunities for specialisation in the United States are particularly powerful in the case of the highly educated, among whom university-trained engineers are particularly susceptible. Ninety per cent. of our Canadian population lives within two hundred miles of one international border fifteen or twenty times as long. Under such a geographical circumstance awareness of a higher standard of living in the United States exerts a strong vocational influence on Canadians who are

financially ambitious and enterprising, and may account in part for the reputation of those remaining for excessive caution if not timidity in the pursuit of careers The trans-border movement is not all in one direction, however Before the Second World War there were approximately three hundred and fifty thousand Canadian residents whose parents were born in the United States, against some two million Canadian-born residents in the United States We are assured, also, that many Canadians in the United States would prefer to return to Canada This is true, for example, of Canadian veterans studying at United States educational institutions, if one may judge from the replies sent by most of them to a letter regarding employment opportunities in Canada

Another obvious geographical influence on the vocational placement of Canadians arises from marked differences in the regions of a country covering 3,500,000 square miles, even if it is true that only 10 per cent of this territory is good for settlement. In the Maritime Provinces, comprising the three small provinces of Prince Edward Island, Nova Scotia, and New Brunswick, the population is small but relatively dense, the standard of living is comparatively low, and the basic occupations are agriculture (especially apple and potato growing), lumbering, fishing, and mining of coal In Quebec, the largest province by area, and the second largest in population, a moderate standard of living is maintained by agriculture, manufacturing, mining, lumbering, wholesale and retail trade, and finance In Ontario, the most populous and the second largest province in area, a relatively high standard of living is sustained by the same occupations, and especially by recently expanded industry. In the Middle West, comprising the three large provinces of Manitoba, Saskatchewan, and Alberta, in which population density is only about 3 5 per square mile, the standard of living fluctuates severely and is dependent chiefly on the production and sale of wheat, cattle, and, in Alberta, oil and coal In British Columbia, the large western province with a rapidly growing population concentrated in the south-western extremity, the standard of living is relatively high, and the major basic occupations are mining, lumbering, fishing, agriculture (especially fruit growing), and manufacturing. In addition there are the vast and sparsely settled Northwest Territories and the Yukon, in which the chief occupations are mining, lumbering for pulp, and some agriculture. Table III gives more complete comparative information regarding population and income in the provinces.

Although the vocational opportunities of most Canadians are limited by conditions in their place of birth, there is a considerable movement of younger people from poorer to wealthier provinces. About 72 per cent. of the present Canadian population have lived in the same province throughout their lives. But taking for illustration those who in 1931 were from 10 to 14 years of age, we find

from the census figures ten years later that British Columbia and Ontario had during the decade attracted substantial numbers of this group, while Saskatchewan had lost one in five and all other provinces except Nova Scotia had suffered some reduction

But internal migration in Canada moves chiefly from rural areas to urban centres. Although more than half the children of age 10 to 14 live in rural communities, about one girl in four and one boy in seven move to a city before they are 30 years of age. There are many causes of this movement Modern mechanised farming enables about one-quarter of the entire Canadian working force to produce enough food for domestic consumption and maintain agricultural exports at about the same proportion of total exports as in 1881, when the services of nearly half the total working force were required Only one son in a family can inherit a developed farm, in older provinces like Quebec there is no more first-class land which might be purchased for other sons, and repeated attempts to colonise marginal land have failed, in any province it is difficult if not impossible to begin as a hired man and save enough to purchase a farm and equipment without a crushing financial encumbrance. Work in the city at relatively high rates of pay is under these circumstances not only an attraction but a necessity for a considerable number

Race and Language

Factors of some importance in the vocational placement of Canadians are ethnic background or native language The two largest groups, of course, are those of British or of French descent, who account for about 50 per cent and 30 per cent respectively of the whole population. Roughly the maritime provinces, Ontario, and British Columbia are 70 per cent British, and Quebec 80 per cent French. The prairie provinces are less than 50 per cent British and about 6 per cent French, and have, therefore, relatively large numbers of other national origins

An examination of the percentages of national groups employed in various occupations in relation to the percentage of all Canadians in the occupations reveals the following conditions Men of British origin slightly exceed their quota in manufacturing, transportation, trade, finance, the professions, and clerical work, they are less numerous than the average in primary occupations and as labour. There is a relatively large proportion of women of British origin in clerical work and a relatively small proportion in service occupations, including household service. Men of French origin are somewhat more numerous than the average in primary occupations, especially logging, and as labour, women of French origin are 50 per cent more numerous than the average of all groups in manufacturing and 50 per cent. less numerous in clerical

occupations Other ethnic groups constitute 20 per cent. of the Canadian population Among the more numerous of these, the Germans, Ukrainians, Scandinavians, and Dutch are much more likely than other Canadians to be engaged in agriculture, as are the Poles and Italians to be employed as labour. High percentages of Italian, Ukrainian, and Scandinavian women are engaged in services of one kind or another. There is little doubt that certain nationalities follow certain vocations For example, the Chinese almost without exception are urban dwellers, engaged in a limited number of occupations, notably the laundry business or the restaurant or lunch-counter business Another group of urban dwellers are the Italians, who engage in trades or professions that do not take them beyond the confines of the city or town in which they live As a consequence, one rarely finds an Italian farmer. It is difficult to determine in many instances whether these tendencies are the result of special flair for such employment or the result of necessity. Newcomers to our land from China, Italy, and other countries naturally seek association with their fellow-countrymen and are as a consequence inevitably drawn towards such occupations as are being successfully followed by their friends

In the past, immigrants from Europe and Asia have been encouraged to enter this country as agricultural workers and as a labour force for heavy industry Education or training in skilled trades was considered to be unnecessary, with the result that many Europeans resident in Canada for years have remained in unskilled-labour classes and have failed to rise much above the economic level associated with unskilled labour As a consequence their choice of employment is definitely restricted.

These examples are sufficient to show that ethnic background helps to determine where a Canadian is likely to live and in what work he is likely to engage But the strength of this influence should not be exaggerated In 1943 no less than 70 per cent. of Canadian men of Scandinavian origin married women of other ethnic groups, and of the other European groups only the French, the Jews, and the Ukrainians restricted themselves noticeably in conjugal engagements to their own people. Such intermarriage is increasing If there are no other considerations of religion, language, or colour, most Canadians are quite uninterested in the European background of the people they marry or employ. It is true that Canada has been described as an ethnical mosaic, in contrast to the United States as a melting-pot, but this distinction is made largely because of the clearly marked French-Canadian culture. For example, a small town in Alberta may be populated almost entirely by Canadians of Ukrainian origin, but they are no less Canadian and regarded no less as Canadian than people of British stock

But racial distinction is a more serious matter for Canadians of

Jewish, Negro, or Oriental origin. During the war Japanese who had been engaged in market gardening and other occupations near the western coast were forced to abandon their means of livelihood and move eastward Although not subjected to any overt type of segregation or persecution, Negroes are probably right in saying that it is harder for them to make a living in Canada than in the United States, if only because their numbers are insufficient to ensure employers or a clientele of their own race. During an acute shortage of office workers after the war, it was possible to secure immediately through a Government employment agency the services of a brilliant Negro girl, who was not only expert as a stenographer and editorial worker, but able and willing to take responsibility and to turn out twice the usual amount of routine work as well. Negro and Oriental Canadians realise that it would be extremely difficult for them to make a living as doctors or lawyers and not much less difficult as teachers, and are deterred by this knowledge, whatever their ambition, from making the attempt. An extremely capable Negro pupil said to his teacher recently "I would like very much to be a doctor, but I suppose I will have to be a porter."

Statistics on the occupations of Jewish Canadians, who constituted 1 48 per cent of the population in 1941, reveal marked deviations from the occupational distribution of Canadians as a whole. Very few Jewish men are engaged in agriculture or other primary occupations, or as labour, but nearly twice the proportion are in manufacturing and nearly five times the proportion are in trade as compared with Canadians as a whole Jews are cognisant of handicaps they will face in certain lines of activity and direct their own lives and those of their children into other fields where success can be achieved A recent article in a nationally circulated magazine pointed out that applicants for employment who have Jewish names are often unable to secure appointments for an interview. This is one reason for their choice of professions like medicine, law, and dentistry, in which the practitioner need have no regular employer, and for their avoidance of professions like engineering and teaching, in which it is usually necessary to apply for a permanent position. In the proportion of their men who have thirteen years of schooling or more, Jewish Canadians far outrank any other ethnic group in Canada, including the British, and it is not surprising that the percentages of lawyers, doctors, and dentists who are Jewish are roughly five, four, and three times respectively the percentage of the Canadian population. Yet, according to the article referred to above, only one of the 578 Jewish Canadian lawyers in 1941 had been elevated to the bench, whereas one in every 17 Gentile lawyers had attained this status

In most of Canada it is an economic necessity and even in Quebec it is an economic advantage to speak the English language.

Hence, although both French and English are official languages, only French-speaking Canadians are in any considerable number and to any respectable degree bilingual. Second- and third-generation Canadians of other than British or French origin ordinarily speak only English and have no persistent vocational problem. But in French-speaking Canada, the three related factors of language, religion, and culture create a special situation which demands separate comprehensive treatment even in the briefest article.

French-speaking Canada

One thinks of the typical French-speaking Canadian as a farmer, who nearly always owns his own farm and operates it with the help of his numerous sons and daughters. The sons who inherit the farm maintain this pattern of rural life, but obviously the other sons and most of the daughters are compelled to find different employment. Largely for this reason the population of the province of Quebec, which up to the present century was preponderantly rural, is now urban in the ratio of nearly seven to four By 1931 less than one-third of all gainfully employed men were engaged in agriculture and, of course, practically all women wage-earners were in other occupations. Every family which has the means is encouraged to educate one son for the priesthood Preparation for this or the other most respected professions of law and medicine involves attendance first at one of the thirty-odd *collèges classiques* for boys for eight years following the seven-year period of primary schooling The cost of this traditional type of education is heavy for those who must board away from home, and it is therefore to a large extent the prerogative of middle- and upper-class families. Moreover, because of the difficulty of the course, only those of superior intellectual ability are likely to complete it. But even among those who have the ability and opportunity there is a growing realisation that an education heavily weighted with languages and allied subjects, including philosophy, is an exceedingly impractical preparation for one who must later make a living in commercial and industrial society The young French-speaking Canadian whose family has insisted that he receive this type of education may be compelled to accept some genteel position in an office at a low salary and with little hope of advancement. He is, therefore, at a disadvantage as compared with his English-speaking compatriot, who receives a more modern secondary education at high school and who may either proceed directly to a course in, let us say, engineering or enter the business world with better orientation.

In this and other ways the French-Canadian culture is ill-adapted to the advanced development of capitalist industry and business.

The ownership, control, and management of large corporations is largely in the hands of English-speaking people—Canadian or American. In factories English-speaking employees hold a disproportionate number of the more responsible and lucrative jobs, from the level of foreman up. At the lower level of skilled and unskilled workers and sub-foremen the employees are almost entirely French-speaking Industrial plants in the province of Quebec are somewhat larger than in the rest of Canada, partly no doubt because of less militant unions and a reputation of the workers for aquiescence in long hours at low wages. Under these circumstances the industrially and commercially efficient English-speaking Canadians are regarded by many as invaders and exploiters The influence of the Church, which is very strong, is by no means directly on the side of this quasi-foreign big business Rather it seeks to maintain the simplicity, thrift, and contentment of an earlier economic order when there were many independent proprietors But resistance of movements calculated to make the majority more assertive in demands for economic advantages leaves French-speaking Canada with weaker counter-forces to powerful corporate enterprise At the same time a reluctance to abandon spiritual and aesthetic values in the education of leaders and to concentrate ambition on economic efficiency handicaps the French-speaking Canadian in vocational competition with his English-speaking compatriot, who may interpret a higher position in business as proof of racial superiority.

It is not inconsistent with the condition just described that the province of Quebec is exceptionally well-equipped with schools for the training in manual skills and in the fundamental vocations of society. There are numerous trade schools in connection, for example, with cabinet-making and the production of textiles There are some twenty intermediate schools of agriculture which give boys a useful six-month course in residence. There are about thirty-five much-admired regional domestic science schools, which give girls a two-year preparation in residence for marriage and family life. There are numerous other schools of similar types. But at a different if not higher level the provision for practical education is not impressive There are many commercial high schools, but there are only four technical schools comparable to the numerous technical schools of Ontario

The reader will gather from this brief description of French-speaking Canada that the influence of tradition, of the family, and of the Church is strong in education and vocational placement. A father who has been successful in his trade or business will desire at least one of his sons to carry on his work, and a professional man, say a lawyer or civil engineer, will almost certainly insist that his son take up the same career There is much less likelihood than among English-speaking Canadians that a young

man will strike out on his own, either to work his way through university, or to give up a secure position for an attractive venture, regardless of family circumstances and family pride. Family influence is also used more extensively than in other parts of Canada to secure positions for sons, daughters, and other relatives. Daughters of families of social standing are regularly educated in convent schools, and in schools of all types a substantial proportion of the teachers are in orders A daughter of any family may become a nun, since the financial cost to the parents is slight, and many girls enter this vocation.

The province of Quebec has been very successful in keeping intact a distinctive type of Canadian culture Apart from the English-speaking minority, who live chiefly in a few larger cities, the population is remarkably homogeneous for America—French-speaking, Roman Catholic, tenacious of established modes of thought and behaviour, happy and vivacious. Nevertheless, the pressure of the modern industrial economy is increasing When young people were compelled to move to the city for employment, the Department of Education established commercial high schools in rural centres to meet an obvious need, and was accused of encouraging the movement But the deeper causes of change cannot be controlled by ignoring their existence In vocational placement, therefore, as in other respects, French-speaking Canada is beginning to conform more closely to the North-American pattern.

Education

Education, no doubt, exerts the strongest single influence in determining one's future career Census tables show that those engaged in the professions and in clerical and commercial pursuits have, and presumably must have, many more years of schooling than skilled and unskilled workers, and that education appears to bring monetary returns, since heads of families with thirteen years of schooling or more have average earnings twice as high as those with eight years' schooling or less In terms both of length and of quality as measured by cost, the education now being received by Canadians varies markedly from province to province. No less striking is the urban-rural variation, the percentage of young people of 15–19 at school is nearly 50 per cent greater in urban than in rural areas, and for ages 20–24 the ratio is the same.

Obviously two factors of great importance in limiting the education of young people are low income and high birth-rate. This is borne out statistically by the relatively short school life in rural Canada and in the province of Quebec, where the birth-rate is high, or in Prince Edward Island and New Brunswick, where *per capita* income is low. In a study of illiterates in the Canadian army it was found that the low income of the family was the most

frequent reason given for non-attendance at school Yet a poll conducted for the Canadian Youth Commission showed that 58 per cent of the young people, aged 15–24, interviewed, said that financial disability had nothing to do with their leaving school. Presumably there are other factors.

As everyone knows, the attitude of the parents is of very great importance in determining the education of the child Those who have high regard for education, whether because they received a good education themselves, or regret that they had little formal schooling, or are engaged in an occupation where formal education counts, or associate with people of education, use a higher percentage of their income than others to extend the period of education for their children and may limit the number of their children partly for this reason. On the whole, illiterate parents and parents engaged in such occupations as fishing, hunting, trapping, logging, and farm labour tend to have illiterate or poorly educated children. In contrast, a country clergyman managed, on a salary of $1,200 a year during the depression of the 1930's, to keep each of his five children at school for a minimum of fourteen years

Nevertheless, it is universally recognised by educators in Canada that more must be done to equalise educational opportunities for all young Canadians. To reduce the rural-urban discrepancy and other variations among richer and poorer areas, Ontario and British Columbia have greatly increased the proportion of provincial expenditure on education and are using the larger grants chiefly for equalisation purposes. Other provinces are moving in the same direction. To reduce discrepancies between provinces some type of financial assistance from the Dominion Government is necessary, and the Canadian Teachers' Federation is now planning a national campaign to secure federal grants for education.

The record of what has been done for veterans of the Second World War gives some indication of the expansion of education which might occur if no capable and ambitious individual were deprived of further training for financial reasons. In 1944 the Canadian Youth Commission made a limited canvass of armed service personnel and concluded that more than 50 per cent. were anxious to take advantage of the Government's offer of further education or vocational training for veterans after the war A large majority of those who had been at school when they enlisted planned to continue their education with the help of the proffered financial assistance. In the event, since the total of close to a million discharged veterans included men and women of different ages and degrees of establishment, the proportion who enrolled in courses was considerably smaller, but still large enough to be impressive. By January 1947, nearly 49,000 veterans had been given assistance by the Department of Veterans' Affairs to enable them to receive university or pre-university training. By November

1948, some 85,000 veterans had been given similar assistance under the Canadian Vocational Training programme, which will be described later in this article. If allowances are made for duplication, and transfers, it appears that upwards of 100,000 veterans have taken advantage of courses of different types.

One result of this programme has been a tremendous increase in university enrolment. In November 1946, there was a peak total of 35,000 veteran students in Canadian universities, and in November 1948 a reduced total of 23,100 Most of these veterans have proved to be earnest students, many of them more anxious to proceed with graduate work than to take employment at the first opportunity. Since the pre-war enrolment in Canadian universities was in the neighbourhood of 45,000, the influx of veterans plus a post-war increase in ordinary attendance gave some universities two or three times the number of students they were accustomed to accommodate. At the university of Toronto, for example, the enrolment ranged from about 5,000 to 8,000 during the twenty-five years prior to 1945, and is now more than double the higher figure The greatest expansion occurred in faculties of engineering, although a proportionately great increase in students might have taken place in medicine if the medical schools had been able and willing to expand under pressure. Other professional or semi-professional faculties which attracted large numbers of veterans were commerce, law, and agriculture. Expenditures for living allowances, fees, and supplementary costs to provide university education for veterans reached about $115,000,000 by March 1949

Another means of equalising educational opportunity at higher levels is the bursary or scholarship. This form of assistance has been limited in Canada, partly because of an economic optimism prior to the 1930's and the fairly general custom of paying one's way through university, at least in part, by summer and spare-time work. In 1944, however, the Canadian Youth Commission found that a great majority of English-speaking young people, and especially westerners, believe that the Government should make it possible for all who have the ability to go to university. Since 1939, the Federal Government and the provincial Governments have jointly made some provision for assistance of this kind through Dominion-provincial bursaries. Up to March 31st, 1948, under this arrangement some 14,000 students received outright payments or loans ranging in amount from $50 to $400 per annum. In 1947–8, for example, assistance was given to some 2,800, of whom 471 were students in medicine, 87 in dentistry, 390 in engineering, 1,008 in arts and science, 73 in agriculture; of the rest, 474 were nurses training in hospitals. But in relation to the demand and the apparent need, the effect of an expenditure of $1,150,000 by the Dominion Government up to the date mentioned

must be considered exceedingly small. The contributions of the provincial Governments were somewhat in excess of the above amount, particularly in Ontario, Quebec, and British Columbia. In Ontario there are scholarships, distributed geographically and awarded on merit and need, for high school students proceeding to university, in addition to university scholarships awarded provincially on the basis of examination results alone. But nowhere in Canada are scholarships sufficiently numerous or generous to neutralise the effect of economic circumstances to any great extent. Whereas in the United Kingdom over 60 per cent of the students enrolled in universities are in receipt of financial aid, it is pointed out in the report of the president of the university of Toronto that only 8 per cent of the student body in that institution were assisted financially in 1947–8 by academic awards, which, of course, do not include payments made by the Department of Veterans' Affairs.

At the elementary and secondary school level it has been recognised increasingly in recent years that the amount and value of the education received by a young Canadian, and its vocational effect, depend to a considerable extent on the retentive power of the school as measured by its ability to hold the interest and meet the needs of the pupil Education at these levels is, of course, provided free at public expense, and attendance is required by law to the age of at least 14, and usually 15 or 16, years of age. This requirement by 1941 brought the average age at which a Canadian leaves school up to 17 years About 20 or 25 per cent up to that time attained the level of high school leaving, or junior matriculation (grades XI or XII). About 3 per cent continued their formal education long enough to graduate from university. To illustrate what happens by reference to Ontario, for every 100 pupils who were in grade VI in 1941, there were about 86 in grade VIII in 1943 and about 27 in grade XII in 1947 It is evident that the heaviest loss of pupils occurs in the high school grades

One reason for this dropping out of school is that secondary schools in rural areas and smaller centres have seldom been able to offer any other subjects than those required for university entrance. Since the proportion of those who aspire to university education in such places is small, and since many of the better teachers are drawn off to the city, relatively few rural pupils remain in the high school grades for more than a year or two. A determined effort is being made to improve this condition by establishing central high schools to which pupils are transported by bus. Such central schools are composite in nature in that they offer courses in agriculture, home economics, shop work, and commercial subjects, and so give the rural pupil a better preparation for employment whether he remains in the country or moves to the city.

In urban centres the traditional type of high school has greater retentive power, especially in the case of pupils whose parents have the money to encourage attendance at university To use the city of Toronto for illustration, the two academic secondary schools in the best residential areas have as many pupils enrolled in grade XIII as in grade IX, whereas the two schools in the poorest areas have considerably less than half as many in grade XIII as in grade IX Urban schools also are assisted in retaining pupils because of their superior facilities and equipment and their ability to offer optional subjects and activities like art, music, dramatics, and athletics Where a choice of academic and vocational courses is offered, the academic courses appear to have greater holding power, but the explanation is almost certainly to be found in the tendency of superior pupils with definite ambitions to seek university entrance and not in any inherent appeal of traditional subjects. Indeed, in western Canada, where university entrance requirements and academic high school programmes have been most radically modified in recent years, the average length of schooling has noticeably increased

Whether or not the traditional high school curriculum gives the best preparation for university and the professions, educational administrators have good reason to wonder whether the scholarly disciplines have any value at all for the great majority This is not the place to discuss the contentious question of the proper content of general education, except to say that something needs to be done if the influence of the high school on the lives of young people is to be as positive as the public have a right to expect Nevertheless, even a few years in the secondary grades of an intellectually centred school has probably some immediate vocational effect in terms of preference for white-collar jobs, and some later up-grading effect when acceptable English and manners are qualifications for promotion

These assets of good speech and presence, with a bonus of well-to-do friends of good social background, are more certainly secured at private schools, which in English-speaking Canada have about one-thirtieth the enrolment of publicly controlled schools. Private schools undoubtedly have some vocational advantage in terms of marriage for women and, less certainly, of advancement in some occupations for men. Law, medicine, and the different branches of engineering attract most of the private school boys who enter the professions. Upper Canada College, a representative private school of long-standing reputation, finds that a noticeably high percentage of its graduates who go from the school into the business world tend to seek entry into financial and insurance companies. These are fields in which good connections may bring very lucrative returns. The same school numbers among its old boys three former premiers of the province of Ontario. Emphasis

on the cadet corps and on an officer-training course for senior boys is reflected in the fact that of 1,580 old boys of the school who entered the armed services during the recent world war, no fewer than 1,200 won commissions.

Vocational advantages similar to those associated with private schools used to be offered by liberal arts courses in universities. But for men, at least, the cost is too great in terms of time and money, and the enrolment in arts has declined rapidly in comparison with the enrolment in professional schools. When education was aristocratic and selective, there was reason for a liberal arts course to produce the scholar and gentleman But in our commercialised democracy, where everyone is under pressure to earn enough or more, such a profession is regarded as a parasitic luxury. The fact is now that the liberal arts course, except when it is a required preliminary for theology, law, matrimony, or some other profession, leaves its graduate stranded with no vocational alternative to teaching. The number, quality, and sex of matriculants in arts are governed increasingly by knowledge of this fact

One must reckon with the possibility, of course, that attendance at university will come to be regarded as part of the general education which anyone of ordinary ability has the right to demand. The recommendations of the reports of the President's Commission on Higher Education, and the proportion of young people now enrolled in colleges and universities in some States, suggest that nearly half of the children in the United States may in the future attend university, as the majority now attend high school, as a matter of course. Not many Canadian educators foresee any such eventuality in Canada, and fewer still, especially those engaged in higher education, would be cheered by the prospect A preliminary report on university enrolment in Canada for the year 1948–9, issued by the Dominion Bureau of Statistics, shows a drop in enrolment to 68,774 from the 1946–7 enrolment of 69,692, although the number of students is still nearly twice as great as it was before the war

Vocational Training

Of chief significance in relation to the present subject of inquiry are schools offering courses which are frankly related to making a living The most important of these, in terms of the number of pupils in attendance, are the publicly controlled vocational or composite high schools. No clear-cut distinction is indicated by these two terms the vocational schools of large cities may be either technical or commercial or both and may also prepare some students for university, the composite schools in smaller cities offer two or more of five courses—academic, commercial, agricultural, technical, and home economics. In any case, it is most im-

portant to note, these schools do not give narrow or specific vocational training, but general education with vocational options broadly preparatory for work in one of the designated fields. A distinction is made by some educational authorities, but not by others, between fully equipped schools offering complete vocational courses of a practical nature three or four years in length, and schools offering limited work in commercial subjects, home economics, industrial arts, and agriculture as options in the general course. In the account which follows the words "complete" and "partial" will be used to differentiate in this way, although the terms are not in every case strictly applicable, their use will give the reader a more accurate impression than can be gained from bare statistics.

Vocational education has developed to the greatest extent in the province of Ontario, where rather more than 25 per cent. of all secondary school pupils in the province, or 46 per cent of all secondary school pupils in the cities and towns where vocational schools are located, attend upwards of forty vocational schools. The enrolment is by far the heaviest in commercial and industrial courses. In addition to this full day-time attendance, there is an even larger attendance in evening classes at these schools. Not included in the provincial records of this complete type of vocational education is the considerable enrolment in partial vocational options such as commercial work, home economics, industrial arts, and agriculture in more than a hundred small composite schools

The provision of vocational education in other English-speaking provinces is roughly as follows Prince Edward Island has had nothing except some commercial work in Prince of Wales College, but is establishing composite schools which will give some courses of the partial type Nova Scotia is now building its first two complete technical schools, which will be maintained by and for the province as a whole, local composite schools will offer partial vocational courses of the usual types. New Brunswick, which has two vocational schools to give complete courses, has well under way an extensive programme for establishing regional composite schools to offer partial courses. Manitoba, which has had partial courses in several schools, is now building in Winnipeg the first vocational school to offer complete courses Saskatchewan has had three complete or distinctly vocational schools in larger centres and is now setting up composite schools, chiefly for courses of the partial variety, in less populous places. Alberta at the secondary level has had only one complete vocational composite school, but is establishing two other composite schools in which some complete courses will be offered; other existent high schools offer partial courses. British Columbia has a technical school at Vancouver and composite schools offering complete or partial courses, most frequently commercial, in Victoria, Chilliwack, and many other places.

From this account it will be gathered that vocational education is gaining ground fairly rapidly in secondary schools. Institutions offering the complete type of course won new prestige for their service in training semi-skilled workers in emergency classes during the Second World War The need for composite schools in rural areas is recognised as urgent by all. A Canadian Research Committee on Practical Education, sponsored by the Canadian Education Association, is seeking means of improving courses and methods. The Federal Government a few years ago renewed its policy of assisting vocational education by grants and since early in the recent war has taken an even more active interest in vocational training, in relation particularly to war industries, service personnel, and veterans. Former high school students in a survey conducted by the Canadian Youth Commission ranked shop work and commercial work as two of the most valuable subjects in high school, in contrast to modern and ancient languages, which they placed at the bottom of the scale, they strongly favoured vocational education and urged that high schools give more time to practical instruction related to various aspects of life

Turning now to specific vocational training directly preparatory for particular jobs, we have a complete and detailed record of Canadian Vocational Training courses provided for veterans since April 1944 Of the 85,000 who attended such courses up to October 1948, some 30,000 were preparing for universities or other academic work The remaining 55,000 are listed as having attended some one or another of some sixty types of courses, although the number of specific occupations prepared for is much greater. The largest numbers chose the following commercial (7,558), motor mechanics, including other types of automobile service (5,817), carpentry (4,375), electrical construction (3,835), machine and tool operation, including metal patterns (3,052), drafting of various kinds (2,489), plumbing, pipefitting and steamfitting and boilermaking (2,023), welding, blacksmithing, and foundry (1,901) The pattern of modern society is reflected in this distribution The training was provided in rehabilitation schools, or training centres, set up or adapted for the purpose

In the ordinary way training for a good variety of trades and occupations is provided for civilians in trade schools operated privately for profit or conducted by industrial firms or other institutions Courses for stenographers, bookkeepers, secretaries, and other commercial workers are given by private business colleges, which in 1944 had an enrolment of some 30,000 But recently there has been increasing interest in the establishment of technical institutes, under Provincial Government control, to give high school graduates or experienced people specific vocational training for a number of occupations The effect on vocational choice of having occupational training made available at low cost in a

Government-controlled institution should be considerable. One such school, the Calgary Institute of Technology in Alberta, has been in operation for many years, the most popular courses for full-time students are electricity, agricultural mechanics, and welding Ontario has recently established four such institutions, of which the Ryerson Technical Institute in Toronto is the newest and most versatile. It offers two-year technological courses in ten schools—of architectural drafting, of electronics, of jewellery and technology, and of welding fabrication, to mention only a few; these courses are intended to train technicians for positions below the level of engineer and above the level of foreman There are also various other courses, day and evening, to train skilled workers in various fields. Two of the other Ontario institutes give three-year courses in textiles and mining respectively to prepare workers for local industries.

Preparation for some skilled trades, especially those related to construction, is conducted through apprenticeship. The appeal of the different trades for young people is very unequal—for example, a great many wish to become electricians and very few are attracted by plastering The nature of the work is undoubtedly a chief determining factor, but it is also true that the rules and conditions of apprenticeship are frequently a deterrent. In Ontario, for example, where laws and regulations have not been changed for two decades, the restriction that entrants must be no more than 21 years of age debars many who might change over from other casual occupations Again, the period of apprenticeship sometimes appears to be much longer than the acquisition of the skill demands, and the work required during apprentice years may bear more resemblance to drudgery than training. Hence even generous fractional pay during the years of apprenticeship fails to attract entrants into less popular trades A similar problem exists with respect to nursing, since hospital training includes long hours of duty more arduous than educative, university schools of nursing offer a more attractive and valuable course, but are too expensive for the majority, hence many girls abandon thoughts of nursing in favour of more immediately remunerative employment in factory or office

One means of improving the efficiency and appeal of apprenticeship is to make school courses an integral part of the training Some progress has been made in getting concessions in terms of a shorter period of apprenticeship for technical school graduates. In some places arrangements have been made for alternating work experience and attendance at vocational school, for example, many employees of the Canadian General Electric Company at Peterboro, Ontario, attend either day or evening classes at the vocational school in that city, similarly some apprentice bricklayers attend a school in Toronto for two three-month periods and re-

ceive living allowances from the Government during these periods. Of growing importance and less well known as factors in vocational placement, training, and up-grading are the educational programmes of large commercial and industrial firms

For example, the training programmes conducted by the Bell Telephone Company of Canada are designed for the purposes of increased work proficiency, personality development, and greater understanding of company organisation and policies They are carried out through day-to-day activity on the job and through group instruction at schools and other central points. Training is provided at the induction of new employees and at successive stages in the career development of individuals throughout their active careers It is available to employees in all vocations—to all skilled craftsmen, to switchboard operators, to clerical personnel, to sales personnel, to engineers and other specialists, and to management personnel. Great use is made of practice sessions, visual aids, and conference method Specialised training units, usually associated with personnel groups, serve in developing training methods, in operating central schools, and in advising supervisors on the application of training methods, but the main responsibility for training is with those who carry a "line" relationship to others

The Robert Simpson Company, one of Canada's largest departmental store retailers, has a twelve-week training period, consisting in part of a sales training course for new sales employees The Ford Motor Company of Canada offers training for machinists. Both Canadian General Electric and Westinghouse have practical courses for high school graduates and for graduate engineers As an illustration of training at the executive level, the plan of the Massey-Harris Company, manufacturers of farm implements, is to give a two-year programme of varied experience in several positions to selected men. All of the firms mentioned and many others employ directors of personnel training, or the like The training programmes have other purposes than to improve the efficiency of employees, since they are closely linked to broader efforts to establish better and more personal relations between employees and management. Hence they are a factor not only in the vocational placement of young Canadians but in retaining their services as employees in one capacity or another.

Something, however brief, must be said of the vocational training of those in exceptional categories. For slow learners in elementary grades there are in some large cities schools which give suitable general education combined with training in occupational skills, such as laundering, carpentry, or even printing. A good proportion of the graduates of these schools have secured and retained jobs and even gained positions of considerable responsibility. A study made in 1935 of non-academic boys of somewhat

lower ability who left special classes in Ottawa between 1927 and 1933 showed that nearly a third had been employed all the time and nearly six-sevenths at least some of the time, and that nearly two-fifths were self-supporting, they were less affected by the depression years because their jobs were at the level of parcel delivery and the like But there is a marked tendency for those of low intelligence to become delinquent, more than a quarter of the boys in the Ottawa study had appeared in court, and where compulsory attendance regulations bring such pupils to ordinary vocational schools, it has been found that failure and frustration increase their tendency to truancy and law-breaking

What is being done by way of vocational training for those whose social maladjustment has resulted in conviction as criminals? In 1947 a vocational training programme was initiated for the inmates of penitentiaries, which are seven in number and under Dominion Government control Admission to vocational courses is secured through voluntary application, but candidates are approved only if their background, education, and ability make it likely that they will profit by the training, which during this first year has been offered in only two penitentiaries and which has been related chiefly to the building trades It should be added, however, that there are also in the seven penitentiaries some hundred and thirty industrial departments, or production shops, in which the inmates acquire fair degrees of skill in particular occupations, and that illiterates and low literates have for years been given compulsory schooling Moreover, since early in 1947 the educational programme has been greatly extended by the introduction of correspondence courses in secondary school subjects and in fields covered by university extension and other courses, nearly one-quarter of the total inmate population have taken advantage of this latest opportunity. In years just prior to the introduction of these educational extensions, a study revealed that only 30 per cent of those being admitted to penitentiaries had served previous penitentiary terms, although an additional 40 per cent had served prison or reformatory sentences, and that a fairly high percentage of those who graduate from penitentiaries do not return to them. A few years from now the results of vocational training and other new educational work may become apparent.

Influences and Aspirations

In cases where some deliberate choice of vocation has been made for or by young Canadians well in advance, the influence of parents, of relatives, and of friends already at work has been a major factor. No data exist to analyse the extent or force of such influences in any detail, but a few general observations may be offered. There is, for an example, an increasing realisation that

influence, and especially parental influence, can be disastrous in its effects, if, whether subtle or overt, it causes the young person to conform to the desires of another rather than to make a vocational choice of his own, psychologists who worked with service personnel during and after the war found that dominant parental influence was a common cause of later breakdowns. It is well that there are not as many fathers as formerly who nurse an impelling desire to see their sons take up their own professions, business, or trade There is, however, a continuing snobbery among adults in their attitude towards manual occupations. This was illustrated when the head chef of a chain of restaurants spoke about his job to grade X pupils in a vocational school, that day twenty boys expressed a desire to become cooks, but by next day, after they had seen their parents, at least sixteen of the boys had changed their minds.

It is difficult to distinguish between direct personal influence and the acquisition of vocational attitudes by young people from their home and social environment A study of the occupational choices of grade XII students in two high schools located in neighbourhoods of different types revealed in both schools a desire of pupils for occupations higher in social prestige than those of their fathers. In the school of the better-to-do neighbourhood hardly any student expressed an interest even in manufacturing, trade, and finance, in which many of their fathers were engaged, and nearly all were aiming at the professions, except a few girls who were willing, perhaps temporarily, to take up clerical occupations Another study of vocational preferences of Canadian boys revealed the same emphasis on social prestige, the same ambition or spur to attain a vocation more highly esteemed than the father's, the same predilection for the professions Another investigator found that 68 per cent of the vocational choices of students in an Ontario city were for a group of occupations, largely professional, in which only 6 per cent of the working population are employed Apparently the remuneration attached to an occupation is a factor of importance secondary to social prestige. There is some evidence, however, that when the father's earnings are high, there is a greater tendency for the boy to look with favour on his father's occupation. An only son is seemingly much more likely than an eldest son to follow his father's vocation, but information about the occupations preferred by most sons apparently comes as a rule from sources entirely outside the family.

The impression should not be gained that family influence is never helpful. Even in the common instance where parents overestimate their children's abilities and are over-ambitious regarding their education and future careers, the result of encouragement sometimes is strengthened determination and persistence which lead to success. School attendance has been found to be most

regular when both parents are living in the home and where families are of moderate size In 1947 there were in Canada the following numbers of families with the indicated number of children

Number of Children	*Number of Families*
0	988,000
1	717,000
2	557,000
3	312,000
4	169,000
5	92,000
6	56,000
7 and more	91,000

Children who are backward in school come in a proportionately high number of cases from socially and economically inferior homes having relatively numerous contacts with social agencies, and presumably the low average educational attainment of the penitentiary population as well as their subsequent incarceration should be attributed in considerable measure to parental indifference Loss of parental influence, not always beneficial, is incurred more frequently than formerly through divorce, the proportion of divorces to marriages increased from 1 9 per cent. in 1940 to 4 7 per cent. in 1945

Another influence on the vocational aspirations of young Canadians is exerted through the so-called mass media of communication—motion-pictures, radio, and daily or periodical publications. Movies have added glamour to the work of the doctor, the newspaper reporter, the aviator, and to some other callings. The opulent settings, costumes, and trappings which depict Hollywood's concept of life hold up constant incentives to making money, as do alluring advertisements and the repetitious guile of radio "commercials" Exposed as they are to prodding and phantasy like this, young Canadians are to be congratulated that preference in deliberate choices of a vocation is shown very often for careers of direct service to society at modest remuneration Brief consideration is given to a few professions of this kind at the beginning of the following section.

Recruitment, Selection, and Placement

One of the services in which an increasing number of people are needed is social work The demand results in part from the extended activities of the Federal Government, including, for example, the payment of family allowances, and from the increased services being given or planned by provincial welfare departments, community groups, and private agencies. At a national conference

on social work in January 1948 it was estimated that there was immediate need for at least 910 trained social workers and that less than half of those places would be filled by students graduating from the seven schools of social work in Canada, although enrolment in such schools has increased nearly 75 per cent since 1945.

Of course the long-established profession in which there is a recurrent recruitment problem is teaching. The over-all shortage of teachers in Canada has been growing smaller since the war, and although there is still a scarcity of elementary school teachers, an over-supply of secondary school teachers is within sight in some provinces The problem of the future is to improve the status of the teaching profession, and the quality of education, by attracting and selecting aspirants of superior qualifications. A committee of the Canadian Education Association is now at work on this problem. One interesting statement placed before this committee claims that the greatest need in education is to recruit teachers from homes of culture It is a fact that teaching at present attracts students in high schools who have mediocre rather than superior ability, and children of rural or small-town families in lower-middle-class economic circumstances rather than of city families in upper-middle-class categories of income and environment. Since the Canadian population is becoming more and more urban, it should hardly be regarded as snobbery to suggest that the teaching profession should become more urbane in speech, manners, tastes, and attitudes.

The increasing number of governmental employees in modern society calls for some illustration of selection methods used by governments For the Department of External Affairs of the Dominion Government, which will serve as an example, the selection of employees is made by the Civil Service Commission through competitive examinations In the case of clerical personnel the examinations are the same as those used for other departments In the case of officers, the candidates must be residents of Canada of ten years' standing, 23 to 35 years of age, and graduates of a recognised university. Post-graduate work in political science, geography, history, economics, or law is very useful, but not an essential condition Officer candidates are first required to write an essay on some general problem and then to answer questions on current national and international affairs. Sometimes, there is a third paper on matters of general knowledge. Candidates who are successful in the written examination are invited to appear before an Oral Board, which is concerned with their appearance and mental ability. Good judgment, fluent speech, and ingenuity are usually the characteristics of successful candidates. Additional points are given to candidates who know foreign languages.

In the above example there is an obviously necessary emphasis on good presence, manners, and bearing. There is some tendency

of industry and business to look for executive officers with similar qualifications One large industrial corporation has been recruiting carefully selected engineers from graduating classes and giving them executive training This practice has to be limited, however, to avoid dissatisfaction and frustration among existing employees of rank and ambition. Modern personnel policy, therefore, also calls for periodic review of every employee to discover developing abilities and aspirations and to transfer misfits to positions likely to be more congenial A large retail firm has introduced a plan of personal review by which each employee is rated every six months and on the basis of which salary and wage increases are made, rating scales have been devised for different grades of employees up to department managers and the review is supervised by a trained psychologist in the personnel department In this and other companies, conferences, pamphlets, films, open discussion meetings, and other devices are used to enable those interested to inform themselves about the company's operations and policy So much, in brief, for the efforts of modern business to find satisfactory placement progressively and ultimately for existing employees, to keep opportunity open, and to resist tendencies to nepotism or favouritism, which might otherwise restrict the distribution of plums to scions of the commercial and financial aristocracy.

What other factors are important in securing and holding employment? Partial data accumulated so far by the Canadian Research Committee on Practical Education emphasises a high degree of competence in language and arithmetical skills, willingness to work, and the ability to associate with other people Other studies point up the importance of this last ability—so much so that educators are beginning to regard academic subjects and vocational training as well-nigh useless unless school experience also enables the young person to live and work satisfactorily with others It has been found that by far the most frequent causes of dismissal from jobs are not related to technical incompetence but to personal defects, including emotional immaturity and lack of common sense One brief review of qualifications for employment puts chief emphasis on dependability The president of a large company stresses loyalty, the will to work, and a large measure of stability The same company uses among other devices for rating prospective employees a test to discover prejudices which might later cause friction between the applicant and other employees Since it is almost certainly as true in Canada as in the United States that only about one industrial job in five requires more than one month's preparatory training, it would appear that more attention should be paid in school and elsewhere to attitudes, to the development of responsibility, and to human relations, and less to the acquisition of formal knowledge and specialised skills.

Other reasons for emphasising general rather than specific quali-

fications for employment are that people change their minds or find new opportunities. The expressed vocational preferences of high school students seldom persist for more than two years Even graduates of university schools of business administration have been found to change their minds about their vocation after graduation, and for this reason one Canadian university department of business administration frankly keeps its course as broad as possible and assumes that men reaching any executive level are better men if they have had a broad business training rather than a highly specialised course In most vocations there are several different types of employment. For example, graduates of the Ontario Agricultural College more often take positions in governmental departments of agriculture or teaching posts at various levels than engage directly in farming, some take employment in business related to agriculture, and a small percentage go into work in quite unrelated fields.

All these examples support the belief that certain personal qualities and broad training are most important in vocational placement, although technical knowledge or skill of a specialised nature is also essential in a limited number of jobs In reply to the question, "How did you secure your present job?", a national sampling of young people 15 to 24 years of age replied as follows mainly through my own efforts—501, mainly through the influence of family or friends—163, mainly through the school—128, in others ways, including employment agencies—192 The young people were strongly in favour of Dominion Government employment agencies, which have been in operation during and since the war.

Age and Sex

This survey would be obviously incomplete without brief reference to two inescapable factors, one increasing in importance and the other decreasing.

With reference to age, the significant fact is that a greater proportion of the population than formerly are relatively old people This has been the result of increasing longevity and, until recently, of a declining birth-rate Its effects include the following numerical superiority, in addition to power of position, now gives greater control over private enterprises, governmental policies, qualifications for entry into occupations and professions, and other important matters to those of mature years, the care of the aged, through old age pensions, for example, competes increasingly with services for the young, such as education, in the allocation of public expenditures; unemployment, to judge from data for 1944 and 1945, strikes more severely in the age-group 20 to 24 than in any other group below age 60. On the other hand, there has been

an increasing tendency of late to place young men about 35 to 45 years of age in top-level positions. Average earnings of both men and women wage-earners increase at present to a maximum during the age period 45–54 The full implications on vocational placement of the conditions mentioned have not been clarified, but there is evidence to show that young people would favour a longer period of compulsory education through college years for those able to profit by it Young people who come of age within the next few years will undoubtedly feel the pressure of competition from veterans, especially in the professions, who completed their education with Government assistance

Child labour does not loom very large as a problem in Canada. In 1931 slightly over 4 per cent of children over 10 and under 16 were reported as employed—the boys chiefly in agriculture and the girls chiefly in domestic service; but this percentage does not include children working without pay at home, especially on the farm. In spite of current stories about men who became wealthy after such a start in life, there can be little doubt that early employment and little schooling is a handicap to success under present conditions During the war, young people easily secured factory jobs at high wages and later had to adjust themselves to somewhat less favourable conditions Those who seize, or are forced to take, casual employment at an early age probably need exceptional luck if they are to secure advantageous placement later.

Although girls in the past were courageous exceptions if they sought employment in other fields than teaching, nursing, office work, retail selling, and domestic service, they find few occupations closed to them to-day A Canadian book on careers for women deals separately with the work of the commercial artist, food specialist, journalist, lawyer, librarian, occupational therapist, optometrist, pharmacist, physician, physiotherapist, and social worker The author admits that there are relatively few women dentists, but points out that the few are all successful. Since about one woman in six remains single, it is obviously desirable for every woman to prepare for some other vocation as an alternative to marriage Moreover, 10 per cent of all gainfully employed women are married, and another 10 per cent. are either widowed, divorced, or permanently separated from their husbands. Indeed, more and more people are recognising that a girl is well advised to work at some chosen occupation not only before marriage but, if there is no hindrance or objection, for two or three years after. This not only helps to solve the difficulty already mentioned of the man's low earning power at earlier ages, but establishes a safeguard against future vicissitudes

One type of employment from which women have shown an eagerness to escape is domestic service. In 1931 about 24 per cent. of all female wage-earners were employed as household workers,

in 1941 about 19 per cent., and in May 1944 an estimated 13 5 per cent. Recently the chief source of additional household servants has been newly arrived immigrants. A second-generation Canadian girl living in a city where other employment is available is unlikely to tolerate long or uncertain hours or an assumption of social superiority by her employer unless she is one who lacks desirable characteristics as a worker in any capacity Even household work by the hour is acceptable chiefly to women of other than Canadian birth It is more in accord with the North American pattern of life that the wife, assisted by her husband, should do the household work with the help of numerous labour-saving devices, and, when the children are young, employ a high school girl or boy as a "sitter" on evenings when both parents go out

Women are handicapped, however, by a tradition of lower wages and salaries and by the reluctance of men and other women to see them in top-ranking executive or supervisory positions. In 1941 the percentages of male and female wage-earners with incomes of $1,500 and over were respectively 20 6 and 2 3. Even in education very few women occupy such positions as principal of a large co-educational secondary school, or inspector or superintendent of schools, yet in teaching, the number of women far exceeds the number of men. Lower remuneration for women is sometimes justified on the ground that men have families to support, yet an investigation made for the International Labour Office showed that only 15 per cent. of women wage-earners in Canada have no responsibility except their own maintenance, and that 22 per cent are the sole support of dependants. One major reason for these handicaps of career women is the competition and example of the more numerous group who would readily abandon any employment—and why not?—for a satisfactory marriage.

It should perhaps be added that girls are under no educational disadvantage In the better-to-do provinces, like British Columbia and Ontario, the number of girls in secondary schools is higher than the number of boys Virtually all publicly controlled schools in English-speaking Canada are, of course, co-educational, although the anomaly persists in secondary schools of segregating the sexes in corridors and in most non-academic activities to discourage freedom of communication Perhaps this practice is conducive to matrimony as a career for women, it certainly is not conducive to the same easy association among young men and women at work as is found among men alone, and is a handicap to the advancement of women in many vocations.

Guidance

A recent development of direct importance to the vocational placement of younger Canadians is the introduction and expansion

of guidance programmes in schools and of vocational counselling generally. In brief the aims of guidance in Canadian schools are to make the student aware of vocational opportunities and to enable him to make an intelligent choice. There is no attempt in guidance and counselling to insist that a person is qualified or unqualified for any type of work, or to use school records and tests of ability and aptitude as a basis for pseudo-scientific predestination, but data so acquired and personal knowledge of the student are used, together with knowledge of vocational opportunities, to give advice regarding the comparative difficulties and chances of success that might be encountered by the student in preparing for and securing work in fields of interest to him

One part of the guidance programme is a study of vocations in regular periods in the classroom, library, or auditorium, since motion-pictures and visiting speakers are used in addition to reading and project work. The need for such study has been revealed by investigation, for example, even students in a city vocational school before the introduction of guidance had no knowledge whatever of more than a limited number of occupations and no adequate information regarding vocations of their own choice In addition to this regular study of vocations, usually in the intermediate or junior high school grades, the guidance programme offers counselling with regard to educational problems, future careers, and other matters at any time The person in charge of the programme, who gives full time to the work in sizable schools, does the formal counselling, but the home-room teacher also advises in a more casual and personal way.

As yet no comprehensive evaluation of such guidance programmes has been made Many, if not most, principals of secondary schools in which guidance has been introduced say that they don't know what they would do now without it Briefs to the Canadian Youth Commission from recent graduates of the schools express strong approval of guidance interestingly enough, those who attended schools where there was no guidance advocate its introduction as a school subject, whereas those who had course work in connection with guidance advocate more emphasis in counselling Undoubtedly many young people have a wistful desire for more definite direction and assurance of placement and success than guidance can offer. It is futile to estimate the effectiveness of guidance by the proportion of young students who enter the occupation for which the guidance officer recorded their preference, since further study of the requirements and conditions of a chosen vocation sometimes leads to a different choice Indeed, some believe that the greatest value of guidance is negative, in that it prevents a young person from being thrust into a vocation through some arbitrary influence, as of a parent or school principal, and becoming disgruntled later.

Even in English-speaking Canada by no means all secondary school students have the advantage of guidance It is probably fair to state that the most advanced development has occurred in Ontario, and that the next most extensive and effective provincial programmes are in British Columbia, Nova Scotia, and Saskatchewan, in that order. All these four provinces have provincial directors of guidance, who, generally speaking, have been able to get guidance programmes in operation in larger academic secondary schools and in vocational and composite schools

For the use of guidance officers and teachers in Canadian schools there is a steady and increasing supply of printed material—books, pamphlets, news-letters, bulletins giving revised statistical data, monographs on particular vocations, cumulative record folders for individual students, and the like Batches of such material are distributed monthly to subscribers across Canada by the Vocational Guidance Centre attached to the Ontario College of Education The Department of Labour of the Dominion Government regularly issues useful information related to employment, and the Dominion Bureau of Statistics turns out valuable publications, some general in nature, some directly related to guidance, and both of great value City guidance officers in larger centres have issued pamphlets of local utility There are guidance notebooks to direct the study of pupils in different grades Even this partial list of materials is sufficient to suggest that school guidance can be thorough enough to enable the student to make an intelligent choice of a career.

Guidance and counselling are offered by other agencies than the school For example, a counselling service was established many years ago in the Y M C A , under which for a moderate fee a young man might secure advice based on a six-week period of testing and interviews Brief mention has already been made of guidance under personnel departments of industrial and commercial firms In a few larger cities trained psychologists have set up offices and offered their services as counsellors Yet such facilities are far from adequate. A few years ago the former Director of Training in the Rehabilitation Branch of the Department of Veterans' Affairs made a survey and concluded that the provision for counselling services in all Canadian cities was primitive and that the effective assistance made available to young Canadians was meagre at best.

Summary

In this article an attempt has been made to indicate and assess major factors which help determine the vocational placement of Canadians These factors have been dealt with in relation to geography, economics, and mobility of the population, race and

language, educational opportunities, vocational training, personal influences and aspirations; recruitment, selection, and placement; age and sex, and guidance There has been brief general coverage of exceptional conditions in Quebec and incidental discussion of various other factors, including the influence of mass media of communication, the activities of private business, and the importance of speech and other personal qualities.

Up to this point an underlying assumption in this article has been that it is a matter of essential importance to the individual whether he is employed in one vocation or another This assumption may be questioned Some will argue that, within broad limits likely to be determined in any event by ability and chance, it does not matter particularly in what work a person engages. The essential desideratum, they say, is that he should have an assurance of some work which will maintain without worry a decency and dignity of personal life

In a book entitled *Canada after the War,* a chapter by an industrialist in the largest Canadian city points out the growing demand for full employment, admits that the era of *laissez-faire* is over, and enjoins industry and business to accept whatever discipline and control may be needed to keep the economy in full operation. Even among those who much prefer the liberty, variety, and stimulus of life believed to be associated with private enterprise, there is a growing presentiment that a serious breakdown of business will cause a remedy to be sought in public ownership It is not the purpose of this article, we may be thankful, to estimate the ability of business men and business corporations to discharge a social responsibility or to forecast a continuance or reversal of the trend towards the assumption of greater responsibilities by government One must point out, however, that there are economic and political forces in Canada which may alter radically, in one way or another, conditions affecting vocational placement as described in this article

The report of the Canadian Youth Commission on *Youth and Jobs in Canada* reveals the attitudes of young Canadians on these fundamental questions It is clear that two world wars and a long economic depression have made young people less optimistic, less eager to go after a fortune, more concerned about peace and security. The majority favour a free-enterprise economy but believe that Government assistance and controls will be necessary to ensure jobs for all Throughout the report it is emphasised that this one issue, full employment, is basic to every other problem.

An industrialist friend of mine sees in this new emphasis on security a decline in the vigour and spirit of Canadians As regards the younger generation, at least, I believe he is mistaken in this interpretation The truth is rather that they are more

realistic in their appraisal of the value of riches and the chances of disaster and, though frankly aware of the necessity of earning a living, more concerned about the life that can be led when income is adequate than about the process of making money. At least the schools of late have tried to cultivate these other interests. Can we blame the young if the schools succeed?

Newfoundland

By the time this volume is printed, Newfoundland will have become the tenth Canadian province The vocational prospects of young people there have been markedly different from those of Canadians as a whole Industrialisation and urbanisation are much less in evidence, and there is little fertile soil for farming. In 1935 more than 60 per cent of the 77,730 gainfully occupied male population were engaged in the primary industries, of these nearly three-quarters were employed in the catching, curing, and handling of fish, less than one-tenth in logging, less than one-tenth in agriculture, and the remainder chiefly in mining and quarrying Only 7 per cent. were engaged in manufacturing, and the majority of these in wood and paper industries The other 30-odd per cent were distributed among other occupations in about the ordinary proportions. These percentages are only rough approximations because many men work for part of the year in one occupation and for part in another. This helps to explain a discrepancy in the importance of occupations as judged by the number of workers or, alternatively, by the contribution to the national income, in 1940 the two pulp and paper companies paid salaries and wages amounting to more than the total value of all exports of marine products, and the four mining companies paid an amount nearly half as large There are natural resources for the further expansion of the pulp-wood and mining industries, but the economy is still commercial rather than industrial, and the chief owners of capital within the country are the well-to-do merchants of St. John's For the young man in ordinary circumstances, however, a career in merchandising would imply the operation of a general store with a small annual turnover, as contrasted with employment and possible advancement in the large retail organisations which have developed in populous centres of Canada.

The population of some 320,000 is distributed largely in small settlements, mainly around the coast, there are only five centres of more than 5,000 people, the largest of which, St John's, is a city of about 60,000 people Living and working conditions, as judged by the standards of North American industrial society, are old-fashioned and in some places primitive Birth-rates and mortality-rates are high, and the standard of living is low. A few

thousand people, including, it is said, an unusually high percentage of millionaires, are well-to-do, but there is no large middle class, and the majority are in poor economic circumstances. The people are almost wholly native-born and about 98 per cent are of British stock Although there has been a continuing net increase in population—about 25 per cent. in the last twenty-five years—a considerable number have emigrated to continental Canada or to New England, in 1940 the number of Newfoundland-born residents of Canada was nearly 26,000, and of the United States more than 21,000. A major cause of economic and vocational difficulties, and probably of poor health conditions, is the lack of agricultural development, there is not much arable land, and even on it the soil is poor, although more ground might be cultivated if the people were by tradition more favourably disposed to engage in agriculture under difficulties.

Women have fewer opportunities for employment than in Canada as a whole In 1935 the number of gainfully occupied female workers was less than 11,000, or one-seventh the number of men Of this total more than one-half were in domestic service and less than 800 in manufacturing During the recent war, however, many women left domestic service to take advantage of new opportunities for employment.

Education has retained a number of characteristics regarded in most of the United States and Canada as belonging to previous centuries or older countries The well-to-do seek a superior education for their sons and daughters in select schools in St. John's or in schools abroad, and some cling to the tradition that the education of the poor need not be the same, in length or quality, if provision is made by scholarships for the exceptionally gifted. Education is controlled by the Churches—chiefly the Roman Catholic, the Church of England, the United Church, and the Salvation Army—which raise money locally by appeals for contributions and similar methods to supplement the Government grants which cover the ordinary minimum operation of the schools There are no schools of the people of the characteristic North American type, paid for by local taxation and controlled by trustees elected locally With limited financial resources and a small and scattered population it is difficult enough to provide adequate educational facilities locally, and the duplication of schools under the denominational system in communities of some size increases the difficulty In 1945 there were 1,198 schools, of which 832 had only one classroom It is not surprising, therefore, that there were no vocational options in the 774 of these schools which offered work at the secondary level, except for some 75 to 80 pupils in grade XI commercial courses in St John's, and no vocational guidance programmes It is said that the denominational system acts as a barrier against innovation, since even in the central

authority the four denominations mentioned are represented by executive officers, any one of whom may effectively resist a change unwelcome to his particular sect

But progress has been made in recent years. School attendance is required by law up to the age of 14 Admittedly the proportion of pupils in higher grades is low, as indicated by the following enrolment figures for 1945

Grade	*Enrolment*	*Grade*	*Enrolment*
I	19,748	VII	4,550
II	8,566	VIII	3,322
III	7,932	IX	2,880
IV	7,269	X	1,690
V	6,371	XI	1,308
VI	5,655	Others	446

Nevertheless, a zealous school principal of liberal views may persuade pupils to stay at school and parents to keep them there. For example, Curtis Academy in St John's expanded during the past few years from a school of 500 pupils with only a few in secondary grades to a school of over 1,000 pupils, many of whom were preparing to enter Memorial College, which offers two years of university work The secondary school programme is academic, but the examination records show far more candidates in mathematics, history, geography, and art than in Latin, although the numbers in physics and chemistry are noticeably low. At the end of each secondary grade—IX, X, and XI—an external examination set by the central authority's Council of Higher Education screens students rather severely, since more than 40 per cent are failed, but the percentage of successful candidates is much higher in larger schools The median salary of teachers doubled between 1941 and 1945, and so gained slightly on the cost of living, the more attractive salaries combined with an improved teacher-training programme are rightly regarded as the surest means of raising educational standards

In the past Newfoundland has had very few skilled workmen, at least in the technical sense of the term, and the organisation of labour along modern lines has existed for less than a decade. But since the war a rehabilitation centre for service personnel set a precedent for technical education, and over a period of years certain industries have built up a skilled labour force by work experience. Newfoundlanders in Canada and the United States have a reputation for mechanical aptitude, as might be expected of a people accustomed to building boats or houses and handy with tools in a general way Industrialisation and educational advance may greatly enlarge vocational opportunities for the majority in the future.

CHARLES E. PHILLIPS.

TABLE I

GAINFULLY EMPLOYED WORKERS IN CANADA, CLASSIFIED IN SOCIAL-ECONOMIC GROUPS

	Male		*Female*		*Male and Female*	
	1941	1921	1941	1921	1941	1921
	%	%	%	%	%	%
(1) Professional persons	3 7	2 9	15 2	19 0	6 0	5 4
(2) Proprietors, managers, and officials	23 6	33 2	3 7	5 4	21 4	29 0
(*a*) Farmers (owners, tenants)	19 0	23 8	1 7	3 3	15 6	20 7
(*b*) Wholesale and retail dealers and service	2 3	4 4	1 6	1 6	3 8	4 0
(*c*) Other proprietors and officials	2 3	5 0	0 4	0 5	2 0	4 3
(3) Clerical, commercial, and related occupations	10 6	10 7	27 9	29 8	—	—
(*a*) Clerical	5 4	4 7	18 7	18 5	8 2	6 9
(*b*) Commercial	4 1	5 1	7 1	8 4	5 4	5 5
(*c*) Other	1 1	0 9	2 1	2 9	1 3	1 2
(4) Skilled workers and foremen	15 7	11 6	1 5	5 3	12 9	10 7
(*a*) Manufacturing and construction	12 5	9 2	1 2	4 9	10 1	8 5
(*b*) Other	2 0	1 6	—	0 1	1 6	1 4
(*c*) Foremen and overseers	1 2	0 8	0 3	0 3	1 2	0 8
(5) Semi-skilled workers	12 3	11 5	17 6	22 4	13 3	12 9
(6) Unskilled and service workers	30 9	30 1	34 1	19 1	31 5	28 5
(*a*) Farm labourers	12 8	14 2	0 6	0 3	10 4	12 1
(*b*) Other	15 9	15 0	1 6	0 1	13 0	12 7
(*c*) Service workers	2 2	0 9	31 9	18 7	8 1	3 7

TABLE II

GAINFULLY OCCUPIED, 10 YEARS OF AGE AND OVER, IN CANADA, CLASSIFIED BY OCCUPATION GROUPS

	Male			*Female*		
	1941		1901	1941		1901
	No	%	%	*No*	%	%
Agriculture	1,064,847	31 7	45 8	18,969	2 3	3 8
Fishing, trapping	51,126	1 5	1 8	324	0 0	0 0
Logging	80,248	2 4	1 0	2	0 0	0 0
Mining, quarrying	71,861	2 1	1 8	25	0 0	0 0
Manufacturing	561,000	16 7	14 8	148,180	17 8	29 6
Construction	212,716	6 3	5 8	777	0 1	0 0
Transportation	294,800	8 8	5 3	16,845	2 0	0 5
Trade	296,599	8 8	5 9	74,018	8 9	3 3
Service	308,550	9 2	6 5	416,906	50 1	57 0
Professional	120,782	3 6	2 6	127,084	15 3	14 6
Personal .	144,726	4 3	3 1	288,651	34 7	42 2
Clerical	159,779	4 7	3 0	154,272	18 5	5 3
Labourers .	251,889	7 5	8 2	804	0 1	0 5
Not stated	9,695	0 3	0 1	1,718	0 2	0 0

TABLE III

POPULATION, 1941

	Total	*Per Square Mile*	*Average* per capita *Income*, 1919–37 $	*Percentage of those* 15–19 *Years of Age at School*, 1941	*Expenditures on Education* per capita, 1945 $
Canada .	11,506,655	3 32	—	35 4	—
Prince Edward Island .	95,047	43 52	256 00	32 7	10 67
Nova Scotia	577,962	27 86	295 00	36 2	14 33
New Brunswick	457,401	16 65	280 00	32 4	11 71
Quebec .	3,331,882	6 36	347 00	25 2	20 22
Ontario .	3,787,655	10 43	481 00	38 2	17 08
Manitoba .	729,744	3 32	421 00	39 7	18 23
Saskatchewan	895,992	3 77	353 00	43 2	18 80
Alberta	796,169	3 20	430 00	46 5	16 51
British Columbia	817,861	2 38	408 00	48 6	19 81
Yukon	4,914	0 02	—	—	—
Northwest Territories .	12,028	0 01	—	—	—

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Note—This bibliography does not include a large number of small pamphlets and other useful materials, including the monographs on different occupations and many other publications of the Vocational Guidance Centre, Ontario College of Education, Toronto

CHAPTER THREE

AUSTRALIA

Education and Occupational Distribution

In Australia, as elsewhere, the relations between education and occupation are both intimate and intricate. They are, for the most part, uncharted While the broad outlines are fairly clear, one meets serious gaps in information at every turn. This may seem strange if it is true, as some critics assert, that the utilitarian motive in Australian education is unduly strong—that the predominant question is whether further education will lead to a better job Motives, however, are individual, whereas the information referred to would be a prerequisite for over-all planning One must anticipate therefore that the total educational structure is unlikely to be closely dovetailed into the total field of employment.

General Social Background

Regarding itself as a land of opportunity, Australia has no marked social stratification—certainly not in the form of an hereditary aristocracy Visitors from older countries are impressed—favourably or otherwise according to taste—by an easy assumption of equality in all grades of occupation. The taxi-driver, the waitress, the plumber will attend to your needs, but with no suggestion of inferiority in the doing A long history of social legislation and of political action by organised labour has given the less privileged classes many opportunities of influencing the course of events. In the political sphere positions of high responsibility have often been held by persons of humble origin and limited schooling Quality of speech is no certain guide to occupational status There are, of course, variations in occupational prestige and, in the main, greater rewards for the well-qualified

The homogeneity of the population makes for general social and occupational mobility. This operates both geographically and economically. Considerable internal movements of population from State to State took place during the gold rushes and the period of easy acquisition of fertile land. Large-scale movements of this sort ceased to be important in the early years of this century, but other events have tended to maintain mobility in different forms The two world wars had a powerful unifying influence and strengthened the Commonwealth *vis-à-vis* the States. Busi-

ness links have freely been established across State boundaries. Air services have in recent years annihilated the great distances between the capital cities On a population basis, Australians are now the world's greatest air travellers Through these various factors many individuals move freely from State to State either temporarily or to take up new positions Indeed, if a count could be made it might be found that one adult in twenty lives in a State other than that in which he grew up or in which he previously worked

Although originally a primary producing country, industrial development in Australia has expanded to a point where the total annual value of secondary production exceeds that of primary production. Indeed, during the current century Australia has moved rapidly towards a self-sufficient economy. A large range of technical processes has resulted. Official occupational statistics for Australia list about 7,000 categories of employment.

The over-all picture of a wide range of employment associated with freedom of movement gives the young person considerable scope for occupational choice. As elsewhere, the young person growing up in a rural district is less likely to be aware of the full range of opportunity or to have readily available facilities for training The swing towards industrialisation partly accounts for a 20 per cent increase since 1933 in the number living in metropolitan and provincial cities (actually slightly more than half of the population of 7,579,358 live in the six capital cities), and the slight decrease in rural population.

The Commonwealth Employment Service

In pursuit of its "full employment" policy and in accordance with the recommendations of the 1943 I L O Conference, the Commonwealth Government has set up the above service Its development, and the growth of Commonwealth-sponsored training facilities, to be referred to later, provide special illustrations of several of the points made above The future of the Service may be partly dependent on political events, especially on the final balance of power between States and Commonwealth But though the conservative (Liberal) Party is not committed as is the Labour Party to the strengthening of Commonwealth powers and services, it is not customary to find that changes of Party lead to the discontinuation of services once they are established. International support for the idea of such services would also be a strong factor.

The function of the Commonwealth Employment Service is to provide a free information and placement service to those seeking employment and to assist employers in filling their vacancies. The Service has 188 employment offices in centres throughout Australia, and also has 500 agencies in more remote places which do the work of an employment office. In all capital cities except Sydney,

where guidance services are well developed, the C E S includes the operation of a vocational guidance bureau. Normally a given branch of the C E S operates within the State where it is situated, but in numerous special cases it may seek applicants or positions in other States as well It also performs a useful service in connection with seasonal employment which, because of vast distances and wide range of climate, often involves inter-State movements of workers. A further important function is the settlement of displaced persons and other immigrants.

Total Picture of Employment

The 1947 census indicated that there were 3,196,431 persons in the "work force" in Australia after excluding the young, the aged, those engaged in home duties, etc This figure represents 65 out of every hundred males and 19 out of every hundred females The male work force was divided as follows amongst the broad occupational groups

TABLE I

Male Work Force as shown in Census Bulletin No 15, 1949

	Per cent
Manufacturing	27 0
Primary production	19 8
Commerce	11 6
Transport and storage	9 7
Building	9 7
Public authority and professional	8 6
Amusements	4 0
Mining, finance, communications, etc	9 6

Though small in numbers, the public authority and professional group is important since it includes most of the individuals for whom long and expensive training is required. A further subdivision shows the following actual number of cases, but degree of professional training is not indicated. It seems probable that the proportion of males in the professional group, strictly defined, would not exceed 3 01 4 per cent, and might be even lower.

TABLE II

Number of Males in Public Authority and Professional Group

Public authority activities	88,907
Defence	53,525
Law, order, public safety	25,000
Religion and social welfare	19,538
Health, hospitals	79,193
Education	65,884
Other professional	17,083

"Full employment" operates at the present time, and though there are a few professions such as law where supply is about equal to demand there is in the main a definite shortage of labour,

particularly in basic industries. There is no arbitrary method of determining the saturation-point for professional services. It depends partly on the general level of prosperity, and partly on public demand. For example, Australia has one dentist per 2,114 of the population. The corresponding figures for Great Britain and U S A. are one in 3,271 and one in 1,500 respectively. The teaching service in Australia has difficulty in staffing schools on present standards. More than one State is importing trained teachers from England. But educational reforms, accepted in principle, would require that the total teaching strength be increased by something like 25 per cent.

Limitations on Occupational Choice

Though there are in Australia no recognised bars of colour,[1] race, creed, or class for those who are citizens, there are some limitations to choice, apart from the economic ones to be discussed later Women, for example, enter the professions without special difficulty but in practice, and sometimes by regulation, they find themselves debarred from higher administrative positions—for example, in the public services. The trade unions may exert an indirect influence and have traditionally been on their guard against overcrowding the industries with which they are concerned In no case can they officially exclude an individual as such, but their approval is required in determining the ratio of juniors admitted. Compulsory unionism operates in the State of Queensland It applies in that State even to the teaching profession Teachers of non-State schools must belong to their appropriate association, and the salaries of all teachers are determined under one award or another by the State Arbitration Court.

Next there are the limitations imposed by the physical or educational requirements laid down for certain callings. For example, a man may be debarred from the police force because he is too short Appointments to the public service, including teaching, normally require the passing of the examination which controls admission to the universities For clerical and similar positions employers often give preference to those who have passed these or earlier secondary school examinations. Admission to particular professional schools at the universities used to depend on the inclusion of specific subjects—most notably Latin—in the matriculation pass Most of these prerequisites have now disappeared.

[1] The aboriginal population is in the main so little in contact with white settlement that it can be excluded from consideration However, in outlying areas there is a good deal of employment in occupations such as cattle raising There is increasing awareness of the need for better educational opportunity for the native inhabitants, but it is too early to say how this will eventually work out for those with ability and desire to enter the white man's fields of employment.

For entering the skilled trades apprenticeship is an important channel. Indeed, in some States it is the only channel for those occupations which are declared as coming under the Apprenticeship Act Apprenticeship in Australia requires a certain amount of day and evening attendance at technical school and the passing of certain examinations.

In general the requirements for entering the skilled trades and the professions are rising, either through longer periods of training or the introduction of some form of certification which did not previously exist This certification at times arises from action within the occupation itself Some instances will be given later.

The Educational System

How does the school system dovetail into the occupational pattern outlined above?

There would be fairly general agreement that specific vocational training should not commence before 14 or 15 years—some would place it even later. A considerable number of children in Australia have entered their first job before they are 15, or else are engaged in direct preparation for it This would be true in many of the trades, in rural occupations, and in the case of those doing commercial courses. Those who are continuing their general education have often by this time "burned their boats" and begun to specialise on the linguistic or the mathematical side The Australian university student will have decided in his first year of study whether he is going to do a general arts course (and if so what subject he will follow through) or whether he is going to do law, medicine, dentistry, or a special branch of science such as physics, chemistry, or biology. It appears that the criticisms of over-early specialisation can be levelled against the system as a whole

It is easy to overlook the vocational significance of the break at 11 or 12 years. It is true that there is a considerable opinion in Australia—and probably an increasing one—in favour of the more comprehensive type of secondary school There are, indeed, a number of such schools, especially in rural centres of population. The majority of pupils in Australia, however, have to transfer at this stage from a general primary school to a secondary school which has at least a broad vocational orientation. It therefore becomes legitimate to ask whether the number of pupils in these schools bears any worked-out relationship to the total numbers in the main fields of employment

A general description of the types of secondary school in Australia is given in the YEAR BOOK for 1937 (pp. 186–200). The structure of secondary education remains much as there depicted, though there have been shifts of emphasis and considerable

development of schools catering for rural children, especially through transportation and consolidation

The main types of secondary schools are as follows

(*a*) The school which provides foreign-language courses, mathematics, science, and general "cultural" subjects. It is the main vocational road for those going on to the university and the professions, but the remaining students, who constitute a large majority, scatter widely over the vocational field.

State high schools and private secondary schools fall within this group.

(*b*) The technical school with "practical" subjects such as drawing, machine work, and metal work as well as mathematics, science, and cultural subjects The junior technical school in Australia, apart from its facilities for pre-industrial training, is somewhat of an approximation to the English modern school The senior technical school leads directly into the skilled trades in industry The junior technical school is regarded as a feeder to the senior school, but pupils who have done a high school course are accepted into the senior technical school

(*c*) Schools with a rural, commercial, or domestic bias.

From published information it is not always possible to calculate what happens to the total educational stream at the secondary stage The following table gives approximate figures for certain States. The variation between these States is too marked to be accounted for solely by differences in degree of industrialisation in the respective areas.

TABLE III

PROPORTIONATE DISTRIBUTION OF PUPILS PASSING FROM STATE PRIMARY TO STATE SECONDARY SCHOOLS

	High Schools	*Technical Schools*	*Higher Primary, "Area", Secondary Tops*
	%	%	%
New South Wales (boys only)	55	30	15
Tasmania (boys only)	21	25	54
Victoria (boys and girls)	33½	36½	30

As indicated earlier the table does not mean that, for example, 55 per cent of boys in New South Wales undertake a strictly academic education—many high schools have a "commercial" section. But taking the table as a whole, the striking variation suggests the absence of any rationalised provision of types of secondary school according to later occupational destination. Of the three States, Tasmania appears to have the closest approximation to what might be "expected". We see from Table I that the great bulk of the male work force is engaged in manufacturing,

primary production, transport, building and similar work for which some form of technical or rural school would seem to be the natural preparation. Far more children attend high school than would be expected from the size of the professional group. The imbalance would be increased by including figures from private secondary schools which are traditionally of "academic" type.[1]

It appears safe to conclude that in spite of the vocational implications of the different types of secondary school education the relative number of places provided in such schools has not been based on a study of later occupational distribution. Public demand has played a considerable part in determining what type of secondary school will be set up in a given district. The academic-type school has historically the greatest prestige, but the technical school has come into its own in the last ten or fifteen years.[2] It has proved impossible in the post-war years to increase secondary school accommodation at a pace to meet public demand. This applies to the technical-type school perhaps just as much as to the high school. The school with a rural bias has also developed much popularity, especially the "Area" school in Tasmania. Several educational writers, while approving of the "reality" of these area schools, have raised the issue as to whether they might not tend to "tie" children to the land. It might well be claimed, however, that the issue of vocational determinism is a wider one than this and that discussion should embrace as well the older forms of post-primary education.

As we have seen, the lines of demarcation between the different types are becoming increasingly blurred in Australia. If this process continues, the problem of supplying various types of secondary school in proportion to the over-all employment situation will tend to disappear. If decision is in favour of a clean break into a single-purpose-type school at 11 or 12 years, a thorough rationalisation of the whole system would seem called for. In any case there is need for a clarification of policy on the function of the secondary school in relation to employment.

Vocational and Educational Guidance

There is not space to give details, but all Australian States now recognise the desirability of guidance and do something in the matter. The most notable progress has taken place in New South Wales The development of these services is opening up for consideration some of the problems mentioned above. It is increasingly realised, for example, that pupils will find themselves

[1] In recent years some private schools have made notable progress in the introduction of non-academic courses.

[2] Australia does not have the problem of differential prestige in anything like the acute form in which it is found in England.

vocationally hampered, or even frustrated, if, under the present system, they make an unwise choice of secondary school or even of school subjects within a given school.

If guidance services are adequate they obviously form the focal point of contact between school and employment. There now seems conclusive evidence that proper guidance can reduce considerably the number of occupational misfits However, the greater the proportion of pupils receiving guidance the more urgent becomes the need for adequate information about the occupational world In particular, reliable estimates are needed of the absorptive capacity of various occupations. Some such studies have been made in Australia, and it is understood that the Commonwealth Employment Service is giving attention to this and related matters But much occupational research is needed We do not know, for example, the average length of working life for various occupations.

Apart from guidance, a better knowledge of the occupational field is needed for the provision of adequate facilities for vocational education proper.

The Economic Determinants of Occupational Choice

As we shall see, Australia has taken some important steps in providing assistance for tertiary training Progress has not been so marked in connection with the secondary stages. Many pupils whose parents cannot (or do not) support them beyond the compulsory attendance age, which for the great majority of Australian pupils is 14 or 15 years, according to the State of residence, must eventually find employment in the unskilled or semi-skilled occupations Pupils whose formal schooling ceases early may, of course, have highly successful careers in business or in rural life, a small but important group have sufficient interest, tenacity, and ability to continue their study at night and win through to higher qualifications; a considerable number, through apprenticeship, eventually become skilled tradesmen But when all this is said there must be a considerable degree of vocational determinism and some wastage of potential talent through the pressure of economic circumstance

We must consider the position of the private schools in this matter [1] Many of these schools have a long and honourable history. They have been the traditional recruiting-grounds for the professions and perhaps to a lesser extent for the Church and the Services With a few exceptions [2] the State secondary schools are a recent even if sturdy growth. In spite of the expansion of State secondary schools in the last thirty years and their steady growth

[1] The word " private " is used here for all schools which are not under State control

[2] The Fort Street High School, Sydney, this year (1949) celebrates its centenary.

in public esteem the private schools have held their own and have long waiting lists The main reasons are fairly obvious. A family tradition often grows up about a particular school, so that one generation after another attends it, some parents need (and others use) boarding facilities for their children, some place stress on the religious background (most of the schools are "church" schools), others wish their children to enjoy the smaller classes and better facilities for sports, others value the opportunity it gives their children for forming useful friendships or themselves for demonstrating that they have "arrived" socially. In Australia it is common for pupils to transfer from State to private school at about the age of 12, though, apart from scholarship winners, some private schools do not have much room for pupils other than those from their own preparatory schools There is a widely held theory that the State schools "give a better grounding", but that once this is acquired it is worth while making some financial sacrifice for children to reap the advantages of the other school world as well

It is of no occupational advantage to a pupil to have attended any given type of school [1] The main consideration is the standard of education reached and the qualifications which can be presented.

The economic position of the parent does, however, seem to count considerably in determining (*a*) whether a child will attend a State or private school and (*b*) whether he will continue his education long enough to enter a profession such as medicine, dentistry, or law. Table IV gives the proportionate occupational classifications of parents in a school of each type in the same capital city The private school is not one of the "exclusive" type and has a large proportion of pupils who have transferred from State schools The figures must be taken as approximate only, since reliance had to be placed on a mere listing of occupations and this in itself does not always provide enough information for accurate classification. The results, however, do show clearly enough that a greater proportion of parents of high school pupils fall into the low-income groups.

The economic factor is probably the one which, in the main, accounts for the greater "holding power" of the private school. As we move up to the ages of 16, 17, and 18 years we find that the relative numbers of pupils in the two types of schools change

[1] This statement must be modified for private employment. Just as some employers are known to take account of the religion of an applicant for a position, so others give preference on an "old school tie" basis Now that former pupils of State high schools are reaching positions of importance it is understood that some of them have adopted a similar attitude to pupils from their old school No one can say precisely how common these practices are or whether they merely come in when "other things are equal". In the main they are probably declining, though personal preferences and prejudices can always be expected

TABLE IV

APPROXIMATE PERCENTAGE OF PARENTS IN VARIOUS OCCUPATIONAL GROUPS IN TWO SCHOOLS IN ONE CAPITAL CITY

Group	*Private School Pupils (420 Boys)*	*State High School Pupils (560 Boys and Girls)*
(1) Professional, higher executives, proprietors of large businesses	29	13
(2) Semi-professional, e g accountants, large landowners, managerial, Government service, business employing five to ten men .	42	23
(3) Artisan proprietors, lesser officials, shop owners, farmers, foremen, etc	25	32
(4) Skilled labourers, carpenters, cooks, firemen, policemen, waiters, shop owners employing no help	4	24
(5) Unskilled labourers, drivers, watchmen, messengers, etc	0	8

TABLE V

	13-year-olds		*16-year-olds*	
New South Wales	State, 100 Private, 26	Ratio	State, 100 Private, 53	Ratio
Victoria	State, 100 Private, 33	Ratio	State, 100 Private, 176	Ratio

considerably. It also varies from State to State, as shown in Table V.

Admission to the Professions

The universities constitute the traditional but by no means the sole avenue of approach to the professions. The following are well-established professions which have forms of training outside the universities. architecture, engineering, forestry, law, nursing, pharmacy, surveying, teaching, and theology. There are also some university courses in these subjects which may form part of the total scheme of training or may be taken as alternative routes into the professions

Then there are some relatively new occupations, and some older ones, where professional standards of training are now recognised as desirable. This group includes. almonry, dietetics, occupational therapy, physiotherapy, speech therapy, kindergarten teaching, librarianship, meteorology, optometry, physical education, youth leadership, child welfare, social studies.

Finally, there is a group of occupations in the world of art, including, for example, music, dramatic art and professional dancing, where training may reach high standards (as in some conservatoria of music) but where there is typically no general educational requirement before admission and where recognition within the profession depends largely on the standing of the individual teacher and on subsequent performance.

For the former two groups of occupations it is not uncommon in Australia to require a standard of secondary education equal to that needed for admission to the universities.

Some of the professions in question are seeking full university sponsorship, others again would consider that the universities are unable to provide a full measure of training in the practical branches of the subject. Apart from the very great pressure on present staffing and accommodation, the universities, on their part, are unwilling to commit themselves to forms of training which do not involve a substantial body of theoretical knowledge. The provision of diploma instead of degree courses is in part a compromise solution. Melbourne University, for example, has diplomas in commerce, physical education, and social studies. Even though the university plays no formal part, the training authorities may by arrangement require their students to take certain university subjects. For example, Victorian students in physiotherapy take, with some modifications, the first two years of the anatomy course with medical students.

To an increasing extent formal admission to the professions is regulated. There may be State legislation—there are no Federal laws in this matter—or there may be action by the profession itself on either a State or a Commonwealth basis. To take two examples admission to legal practice in each State is controlled by the Supreme Court of that State. No person not admitted by this Court may practise law. Librarianship is fast becoming a profession. Training courses have been set up by several governmental authorities but the profession itself has organised a series of graded examinations on a Commonwealth-wide basis It is the hope of the Library Association that those who employ librarians will require applicants to hold their qualifying certificate.

In general, then, we find an upgrading of qualifications required for entering the professions and a tendency for new professions to be created or to be recognised. The same process is going on in the fields of commerce, technology, and industry, ranging from accepted high standards for the actuary or the industrial chemist to an increasing recognition of the need for training in management and foremanship.

All of this has an important bearing on the educational system as a whole and gives increasing opportunities to those who continue their general education beyond the minimum level.

University Training for the Professions [1]

The universities all provide courses in arts and science, leading to a first degree in a minimum of three years The main professional outlet for the arts student is probably teaching, though specific professional training is also normally required One university, through a combination of general and professional subjects, now makes education a first degree In others the courses in education follow the taking of a bachelor's degree in arts or science, or else lead to an award other than a degree The science graduate normally goes into some sort of applied science or into research work.

Apart from the general courses in arts and science, Australian universities provide professional training in medicine, dentistry, law, engineering, commerce, agriculture, veterinary science, education, and architecture. The fees necessary to do a course leading to a first degree or diploma range from less than £100 to over £300 according to subject and location, except in the case of West Australia, where instruction, except in dentistry and medicine, is free.

Numbers of Students · Financial Assistance

The total number of university students in Australia rose from 18,326 in 1945 to 30,477 in 1947 These numbers, of course, are "inflated" by the inclusion of ex-servicemen and women, of whom at the end of 1947 there were 11,125 in full-time training under the Reconstruction Training Scheme. Although some decrease in university enrolments is expected with the completion of courses by students from the services the normal growth of the universities will prevent a return to anything like the 1945 figure

The Commonwealth Reconstruction Training Scheme up to the end of 1947 had given assistance to 17,666 full-time and 10,016 part-time students at universities and university-type institutions. Grants ranged from £3 15*s* a week for single men to £5 15*s*. a week for married men with two or more dependants. The expenditure on this scheme for 1947 was £3,355,441, of which over £2,000,000 represented living allowances to trainees The scheme is operated by the Universities Commission. A parallel scheme for technical-type training under the Department of Labour and National Service had provided, up to the end of 1947, full-time courses for over 50,000 students and part-time and correspondence

[1] *Student Selection and Academic Success*, by Dr C Sanders, Research Officer for several years to the Universities Commission, published by the Commonwealth Office of Education in 1948, gives much valuable information The Annual Reports of the Universities Commission give many details about the universities as well as the Commonwealth scheme for financial assistance.

courses for over 130,000 students from the services. By that date 36,000 applicants had completed courses covering practically all skilled trades in Australia.

To some extent these schemes serve to replace training missed during the war years, but they are undoubtedly making an important contribution to the general level of competency of the community and are providing many individuals with occupational skills they would not otherwise have had The universities and other institutions have found that the maturity and seriousness of the ex-service trainees have enabled them on the average to surpass the performance of those entering in the normal way.

Important as these schemes are to occupational efficiency in Australia they can be regarded in the main as a salvaging operation. Of even greater potential significance is the Financial Assistance Scheme now being operated in interim form by the Universities Commission A permanent plan, presumably of similar type, is at present being considered by the Commonwealth Government. The plan in operation provides a maximum allowance of £130 per year for students living at home and £169 per year for students not living with their parents The maximum amount is paid when the adjusted family income (the main adjustment being a deduction from income of £50 for each dependent child under 16) does not exceed £250 The amount of assistance is decreased by £4 for each £10 by which the adjusted income exceeds £250. There is a limit to the number of places available at universities and at approved technical colleges. For the university places the numbers vary according to faculties and according to State, the total for the Commonwealth being about 730. Applicants are selected on the results of the examination which qualifies for admission to the university.

Under the foregoing scheme 2,023 students were assisted in university studies in 1946 and 1,996 in 1947 The average amount granted per student in 1947 was £109 and the total cost was £217,815 During the same year about £20,000 was paid to students doing technical college courses. Apart from Commonwealth aid there are various other scholarships, bursaries, and free places. Dr. Sanders states that in 1948 the proportion of university students receiving aid in one form or another would not be less than 60 per cent.

Failure-rates and their Significance

In all courses of study, especially those conferring the right to "practise" on the community in a professional capacity, some proportion of failures is necessary as a protection against incompetence. It seems doubtful, however, whether reasonable consideration has been given in Australia, and probably elsewhere, to

a determination of what proportion of failures is necessary to achieve this end.

In the Australian universities we find marked variations from course to course within a given university, between corresponding courses in different universities, and at times in the same course from one year to another Where the student groups are large, it is impossible to believe that such fluctuations are accounted for by variations in the quality of the students themselves. On present evidence Dr Sanders considers that something like 55 per cent of entering students emerge with degrees and probably fewer than half of these do so in minimum time.

Student selection for tertiary education in Australia is at a fairly high level Several studies suggest, for example, that the average I Q of university students is in the region of 120, and that few students with I Q s below 115 succeed in completing courses A study carried out in 1942 by the Association of Principals of Victorian Technical Schools showed that there were abnormally high failure-rates for certain technical school examinations in that State

The whole question is complicated and calls for careful investigation Failure, with the possible abandonment of a professional career, is very serious for the student and wasteful for the community—especially if it occurs in the later years of a course. It is still more serious if, through any arbitrariness of standard in determining failure-rate, potentially competent practitioners should be prevented from following their occupational choice There is a possible temptation in university work to give most attention to the honours student and the potential research worker. High failure-rates, where they occur, may be contributed to by large classes and poor teaching conditions, or, indeed, poor teaching It may well be asked, however, whether tertiary institutions should admit more students than they can effectively handle. The same argument applies if there is any thought of preventing overcrowding for a given profession.

Public Service Employment in Australia

The steady growth of Government functions in Australia increases the chances that an individual will enter such employment It has been claimed that something like three people out of every ten in employment are Government servants However, these figures are quoted by those who are critical of governmental as opposed to private enterprise, and include certain categories such as employees of municipal authorities who would have to be excluded under any strict definition of " public servant "

There can, of course, be no question of the growing importance of securing suitable recruits and particularly of enabling able persons to reach administrative posts. Australian practice in the main

follows the plan of securing recruits by competitive examination at the termination of secondary schooling.[1] Provision is typically made for encouraging public servants to improve their educational qualifications, and many have carried out university studies. It has frequently been claimed that recruits should be more freely admitted at later ages and that, specifically, the public service would benefit by the admission of those who did not decide to enter it until after the completion of a university degree. The Commonwealth Public Service Act provides for the appointment of graduates of not more than 25 years of age up to a total of 10 per cent. of the number of appointments to its third division by examination. This figure is not high enough to satisfy most of the critics.

Summary

In general the relationship between education and employment in Australia is seen to require further elucidation, particularly in the direction of occupational research In the light of this occupational analysis there is need for an examination of secondary education so that both in nature and in amount the last years of compulsory schooling will provide not only a suitable general education but a suitable exploratory and pre-vocational period for all pupils. The examination would undoubtedly reveal inadequacies in the provision for vocational education proper, and would probably show a relative neglect of those whose levels of ability and aspiration would place them in the middle or lower categories both absolutely and in relation to particular vocations There is much to be said for catering for the outstanding individual, it becomes necessary to protect some vocations by educational hurdles high enough to eliminate those who are not suitable We need, however, a much clearer view of this concept of suitability. We need to be assured that we do not limit our interest to those who survive tests of an arbitrary degree of stringency In Australia as in any other society the average level of community efficiency is far below its potentialities. Particularly at a time of high wages like the present is there a danger that young people will start earning too soon and neglect opportunities for improving their qualifications All the foregoing questions become increasingly urgent as the school-leaving age is raised. There are insufficient signs of thorough-going planning for the last two or three years of full-time schooling, especially for those who up to now have welcomed the chance to leave at 14 years.

Study should be made of the effect in Australia of the operation

[1] For a detailed account see R. S Parker, *Public Service Recruitment in Australia,* published in 1942 for the Australian Council for Educational Research by Melbourne University Press.

of wage laws. The compulsory payment of a minimum wage at 21 years, the desire of employers to obtain some years of service at lower rates, and the necessity for starting apprenticeship at 16 all tend to make for early entry into employment. This naturally has some effect on the level of general education of a considerable proportion of the population

On general sociological grounds Australia has, as we have seen, a relatively small number of restrictions on choice of employment by the individual Geographical or historical restrictions are at a minimum, and commendable efforts are on foot to remove economic restrictions at least at the higher levels. Much remains to be done, however, to ensure that economic handicaps do not operate before the tertiary stages of education are reached.

K. S. CUNNINGHAM.

CHAPTER FOUR

NEW ZEALAND

Occupational Distribution

IN New Zealand, as in other countries with modern economies, the working population is distributed over many hundreds of occupations which may be classified in a variety of ways A broad view of one side of the picture is given by a classification in terms of the type of industry in which the people are engaged. Table I, which has been compiled from the latest report of the Department of Labour and Employment,[1] sets out the facts.

TABLE I

ESTIMATED DISTRIBUTION (IN PERCENTAGES) OF THE WORKING POPULATION OF NEW ZEALAND IN OCTOBER 1947

Industrial Group	*Males*	*Females*	*Total*
Primary industry	23 5	1 9	25 4
Secondary industry	24 9	6 2	31 1
Transport and communication	8 7	0 9	9 6
Distribution and finance	10 2	5 3	15 5
Public administration and professional	6 5	6 1	12 6
Domestic and personal services	2 2	3 6	5 8
All industries	76 0	24 0	100 0

The primary industries include farming (much the most important), sawmilling, mining, and quarrying Among the secondary industries engineering and metalworking absorb the largest numbers, with building and construction not far behind. Then come the textile, clothing, and leather industries, those concerned with food, drink, and tobacco, the building materials and furnishings group; and those connected with power and water supply—in that order. "Transport and communication" covers rail, road, water, and air transport and post and telegraph services. "Distribution and finance" includes wholesale and retail trade, banking, and insurance. Under "Public administration and professional" come Government and local body administration (but not their pro-

[1] *Report of the Department of Labour and Employment for the year ended 31st March, 1948*, p. 5 (Wellington, 1948).

ductive activities) and the education and health services. "Domestic and personal services" includes work in hotels, restaurants, laundries, hairdressing saloons, and the like, and domestic service.

New Zealand is so well known as an exporter of primary produce, and is indeed so dependent economically on her export surplus, that the outsider is apt to think of the Dominion as one large farm and to imagine that the range of occupational opportunities is rather narrowly restricted. Table I may help to correct any such impression. It will be observed that more people are engaged in secondary than in primary industry, and that still larger numbers are absorbed by the so-called "tertiary industries".

Classification by industrial groups is of limited value, since in most of the groups there is a range of occupations extending almost from the top to the bottom of the scales of responsibility, skill, social esteem, and economic reward. To be able to show how the population is distributed over the more responsible and the less responsible, or over the well-paid and the poorly paid jobs, one needs some classificatory system or systems based on adequate research The nearest approach to such a scale for New Zealand is a classification [1] drawn up some years ago for purposes of educational research. The general plan is that of Cyril Burt's classification of occupations according to the degree of intelligence they require, but in the process of revision some weight was given also to considerations of social and economic status. As social status is far from being perfectly correlated with economic status, and as neither of these gives more than a rough indication of the intellectual requirements of a job, the scale is defective as a measure of any one factor. It can none the less be used—with due reservations—to round out a little the picture of occupational distribution in the Dominion.

The seven groups comprising the scale are listed below, with a few typical occupations for each. No significance should be attached to the place of farmers on the scale: they are a very diversified group and it was found convenient to make a separate category for them.

GROUP I. *Higher Professional and Administrative Work* Architect, bank manager, clergyman, lawyer, professional or administrative officers of the public service, school teacher.

GROUP II. *Lower Professional, Technical, and Executive Work.* Accountant, employer, engineer (structural, mining, chief marine), merchant (large), masseur, surveyor.

GROUP III. *Clerical and Highly Skilled.* Builder, bank clerk, electrician, foreman, jeweller, postal sorter, restaurant keeper.

[1] H C McQueen and others, *The Background of Guidance*, pp. 119–20 (New Zealand Council for Educational Research, Wellington, 1941).

GROUP IV. *Skilled Work* Building trades, compositor, policeman, shopkeeper, upholsterer, warehouseman.
GROUP V. *Semi-skilled Repetitive Work.* Bushman, barber, coalminer, carrier, gardener, painter and paperhanger.
GROUP VI *Unskilled Repetitive Work.* Cleaner, domestic servant, factory hand, labourer, liftman, shearer.
GROUP VII. *Farmer, Farm Manager, Orchardist.*

As yet the scale has not been applied to the whole working population, but figures are available for the fathers of a large and very representative sample of 10- and 11-year-old school children These are given in Table II.

TABLE II

DISTRIBUTION OVER OCCUPATIONAL GROUPS I–VII OF FATHERS OF 11,421 10- AND 11-YEAR-OLD SCHOOL CHILDREN (1936)

Group	*I*	*II*	*III*	*IV*	*V*	*VI*	*VII*
Percentage	3 5	5 7	11 8	22 0	20 8	14 2	22 0

The figures, it should be emphasised, are for men most of whom were in the prime of their working lives If the whole working population, including women engaged in "gainful occupations", had been included, the percentages in Groups I and II would certainly be smaller and those in Groups III to VI larger.

Occupation and Socio-economic Status

Any such classification as the above is misleading if it suggests that there is in New Zealand a clear-cut occupational hierarchy. It is true that the gross income of, say, a university professor is three or four times as large as that of the unskilled labourer on the basic wage, and that of the most prosperous farmers, business men, and medical practitioners ten to twenty times as large, but it is also true that on occasion semi-skilled and even unskilled labour may earn a bigger economic reward than certain types of professional work. Moreover, as is well known, the process of redistributing wealth through taxation, the institution of social security benefits, and the establishment of social services generally, have in New Zealand gone a very long way. The difference in economic position between those in the highest-income brackets and those in the lowest is therefore much smaller than the comparison of gross incomes might suggest. The relationship between occupation and social status is likewise less marked than in the older lands For example, "white-collar" work *per se* is accorded only a moderate degree of respect, and it could hardly be otherwise in a country in which there is a pioneer tradition and in which well-to-do and influential sections of the community (far-

mers, for example) work with their hands More than this, there is a fairly widespread conviction that all forms of useful work are worthy of respect, and that "a man's a man" irrespective of his occupation. In many social relationships one's occupation matters relatively little, and the man who expects deference merely because of the position he holds is likely to be made aware of his mistake in no uncertain fashion.

It follows that such terms as "the social ladder", "the class structure", and "the occupational scale" cannot be applied to New Zealand without substantial qualification All these phrases carry false suggestions of rigidity, of sharply drawn dividing lines, of a great gap between the highest and the lowest grade, whereas the true picture is of a relatively narrow social spectrum in which one "grade" shades imperceptibly into the next and in which there is much movement from grade to grade. Indeed, it is often hard to say whether a move from one occupation to a very different one represents a step up the social ladder or a step down it. Yet one must not exaggerate the degree of social and economic equality that exists For example, in her careful and discerning study of girl workers in New Zealand factories, Maude Eaton reports that most of these girls appear to suffer from acute feelings of inferiority which are often closely associated with the nature of their occupation "Most factory girls," Eaton says, "are a little on the defensive about being factory girls. Many other occupations, particularly the proverbial 'office job', are usually regarded with feelings of resentment, wonder, and envy . . . Even in wartime . . . girls from the higher-income groups generally regarded factory work as something to be avoided at all costs. They would perhaps try to get a job in a bank so 'as not to be man-powered to a factory'. . . . Even girls from lower-income groups will not generally go into a factory if they have a chance to enter office jobs or occupations such as hairdressing."[1] Studies of girls in offices or hairdressing establishments would doubtless reveal somewhat similar if less intense feelings on their part towards other occupations—the professions, for example An absence of sharp distinctions between one occupational grade and the next is therefore a very different thing from a complete absence of grades. How the community ranks the various occupations we do not know in detail, and research into the subject might well reveal some surprising facts both about the attitudes of New Zealanders in general and about the attitudes of particular groups—one would not expect clergymen, stockbrokers, and slaughtermen to agree completely in their assessments. It is clear, however, that for the majority of people a desirable occupation is one that is at least

[1] Maude Eaton, *Girl Workers in New Zealand Factories*, pp 8–9 (Industrial Psychology Division, Department of Scientific and Industrial Research, Wellington, 1947).

moderately well paid, that is secure, that offers prospects of advancement, that carries some social prestige, that is interesting in itself, and that gives scope for initiative How many feel also that the occupation should have a real social value it is very hard to say, but they are perhaps more numerous than some observers imagine. On these criteria there is a comparatively small number of highly desirable occupations, a much larger number that are more or less desirable—and so on down the scale till we reach jobs that hardly anyone would do from choice

It is a commonplace that the number of routine jobs tends to be out of all proportion to the number of persons who are intellectually capable of nothing but routine work To the extent that New Zealand is not highly industrialised and that industrial and business units are usually small, this problem is less acute than in many other countries. But it is more acute to the extent that there is no social class that regards itself as inevitably committed to dull work and that the schools increasingly place their emphasis on personal development and creative activities Indeed, in a recent address to careers advisers, L. S Hearnshaw, an industrial psychologist with an intimate knowledge both of education and of labour conditions in New Zealand, spoke of "the widening gulf between education and work". If the gulf were not to widen still further, he said, the schools would have to be more realistic—"it is unfair to the young person to encourage, even unintentionally, impossible vocational dreams"—and the employer would have to realise that "the young person of to-day is better educated and wants richer opportunities and more human interest in his work".[1]

Education for Status and Security

We have now to ask by what influences and processes certain people secure the desirable jobs while others must remain content with more or less undesirable ones And what in particular is the role of education in the sorting process?

In comparison with most other countries education in New Zealand is easy of access and the educational coverage is remarkably even and complete. At the primary and secondary levels education in State Schools is entirely free until the end of the year in which the pupil turns 19 (though few young people take full advantage of the provision) The last barrier to free secondary education disappeared in 1936 with the abolition of the so-called "proficiency" examination, which had been used since the beginning of the century as a qualifying test for free places in secondary schools. Easy access to university studies is made possible by

[1] L S Hearnshaw, "Education, Work, and Vocational Guidance" in *The New Zealand Vocational Guidance Bulletin*, Vol. VIII, No 8, pp. 2–4.

bursaries through which free tuition is available on liberal terms; by the provision of lectures, especially in arts, law, and commerce degrees, before or after working hours, and by arrangements that permit some qualifications to be secured extramurally. There are also a number of scholarships and special bursaries that cover not only tuition fees but most of a student's living expenses throughout a university course, even in medicine.

The actual provision of educational facilities is on a correspondingly widespread scale More than a hundred rural centres have district high schools (primary schools with secondary " tops "), and some quite small towns have separate secondary schools Provision of transport makes it possible for many children to travel long distances to school, others are catered for by means of boarding allowances which enable them to attend secondary schools as day pupils, or, if they live in very remote districts, by a correspondence school which will take them to the end of a secondary course There are six institutions at the university level university colleges at Auckland, Wellington, Christchurch, and Dunedin, and two agricultural colleges, one in the North Island and one in the South

All this is largely due to a steady, widespread pressure towards equality of opportunity which in turn has been inspired in the main by a desire for the status and security provided by a good job Though the motive has sometimes been crassly materialistic, persons in comfortable circumstances can easily be priggish, not to say hypocritical, about it It can be justly appraised only in the light of the near-poverty, insecurity, and frustrated vocational ambitions that in an earlier day were the lot of no small number of the New Zealand people Nor would one suggest that the motive has been stronger in New Zealand than elsewhere. The truth is rather that the section of the population seeking easy access to education has been powerful politically and that the wealth of the country has permitted the expansion demanded

One consequence is that the education system has functioned as a social elevator to a marked degree Examples of boys from poorish homes who have distinguished themselves in the professions or gone far in the public service are so numerous as scarcely to occasion comment, and the numbers of those who have risen just a grade or two in the socio-economic scale must be very large indeed. This phenomenon is naturally least in evidence in those fields in which formal educational qualifications count for relatively little and in which it is hard to advance unless one possesses a good deal of capital. The man who, having started from scratch, has become the owner of a large business or of a highly profitable farm is not very common. New Zealand is not a country in which fortunes are made overnight, and the materially ambitious boy with no capital but his ability and his willingness to work is per-

haps more likely to enter one of the professions than to go into farming or business.

Early Leavers

We may now consider in greater detail the part that education—or the relative lack of education—plays in determining children's vocational futures

It is not true of New Zealand, as it is of some countries, that a child gains important vocational advantages by attending private schools rather than public schools. The public primary and intermediate schools are patronised by almost the entire community with the exception of those belonging to the Roman Catholic faith At the secondary level the tendency for the more or less well-to-do to send their children to private schools is much more marked, but very many who could afford to take this course do not do so. The majority of university professors, for example, send their sons and daughters to the public secondary schools, some of which, indeed, enjoy a social and educational prestige higher than that of most of the private schools

The primary schools of New Zealand provide an eight-years course that is completed by the average child at the age of about $13\frac{1}{2}$. (An increasing number of children spend the last two years of this period in reorganised intermediate schools or departments, but this change is not thought of as implying an earlier beginning of post-primary education) The permissive school-leaving age is 15, which means that the average child has at least eighteen months' full-time post-primary education Important decisions affecting the child's vocational future are made at the point of transition from the primary to the post-primary stage If he lives in the country or one of the smaller towns he will go to the local high school or district high school, and will have to choose a course As the labels of the courses imply—" academic ", " commercial ", " industrial ", " home life ", " agriculture " are among those commonly used—each is regarded as being in some degree preparatory to a broad group of occupations In the cities and some of the larger towns he will have a choice of school—secondary or technical—as well as a choice of course within the selected school. The decisions made, though tending somewhat to commit the pupil to a certain broad field of work, are, however, a good deal less momentous than might appear. All pupils in all types of post-primary schools now include in their courses a " core " of studies and activities comprising English language and literature, social studies, general science, elementary mathematics, a craft or one of the fine arts, music, and physical education, the result being that courses are less sharply distinguished from one another than in the past and less vocational in their emphasis Moreover, the requirements for the School Certificate, which is

usually taken at the end of the third or fourth year and which is intended to serve as a general leaving qualification, are such that it may be gained by pupils who have pursued any of the recognised school courses In this way a wide range of vocational possibilities is kept open for a large number of pupils for a considerable time

It should be emphasised that the decision as to the school the child will attend and the course he will take rests very largely with the parent The corollary of unselective entry is, of course, an adequate system of educational and vocational guidance. Such a system is being built up, and is available to parents. None the less, when a parent has a very strong preference for a particular course for his child it is rare for the school to act contrary to his wishes

With some 12 per cent of primary school leavers the problem of choice of post-primary school does not arise they turn 15 before completing the primary course and go straight to work. Of the remaining 88 per cent. a sixth leave at the end of, or during, their first year at post-primary school, and another third at the end of, or during, their second year—many of them just as soon as the law permits. It is from this group that semi-skilled and unskilled workers are very largely recruited Two complete years of full-time post-primary education are now usually demanded as a condition of apprenticeship to the skilled trades, the School Certificate requires at least three, and university entrance at least four

Some studies of the factors tending to result in early leaving were made in 1935–7 (before the school-leaving age was raised to 15) by investigators working under the auspices of the New Zealand Council for Educational Research The investigators summed up their findings in these words

"In general it may be said that there is often a chain of consequences that leads to the choice of work at the end of a primary school career Most of the children who do not continue their formal education are from homes with resources limited by the economic status of the parent Many are below average in ability to profit from schooling of a conventional kind Hence they do not succeed in school, have to repeat a class or classes, and in the end are older than the average at the completion of their time in primary school. It is not surprising that distaste for school is one of the conditions that lead a boy or girl to decide to go to work at the close of the primary course" [1]

Much the same is certainly true of many of those who now leave school at 15. Considerable numbers of them, it is not to be doubted, are happier at work, and better off in other ways, than they would be if they remained at school, and some, of course, continue their schooling at evening classes. But there is no cause

[1] *The Background of Guidance, op. cit.*, p. 81.

for complacency. Maude Eaton, in the report already referred to, presents evidence to show that the lack of confidence displayed by most factory girls is related not only to the status and nature of their work but also to their restricted education, which hitherto has rarely gone beyond the primary stage. "An inadequate education," she writes, "besides involving feelings of inferiority because of its very inadequacy, leaves people less able to cope with their social environment and therefore acutely aware of their own limitations. . . . I have met girls with an intelligence obviously higher than that of the average New Zealand undergraduate who feel that they are constitutionally incapable of anything better than domestic or factory work." [1] As the raising of the school-leaving age takes effect, an increasing proportion of the girls in factories will have had at least a year or so in post-primary school, but neither the raising of the age nor the adaptation of the curriculum to the needs and abilities of the large intellectually dullish group that constitutes the bulk of the early leavers solves the problem of the able minority who for economic or other reasons go to work before completing a full post-primary course and enter, and perhaps remain in, occupations giving little scope for their capacity

Evidence on the extent and nature of this problem is presented in a recently published report by G. W. Parkyn on children of high intelligence [2] Though the findings strongly suggest that extreme cases of the type reported by Eaton are very unusual they none the less reveal a very definite relationship between the socio-economic status of the homes of children of high intelligence and both the amount of schooling they receive and the kind of occupation they eventually enter. Thus, of the children of high intelligence (Otis I Q 120+) leaving the primary schools of one of the principal New Zealand cities during the years 1935, 1936, and 1937, very few of those whose fathers were in the professional and executive groups (Groups I and II of the classification described earlier in this article) left in the first three years of secondary schooling, whereas about 40 per cent did so of those whose fathers were in the skilled, semi-skilled, and unskilled workers' groups (Groups IV, V, and VI of the classification). Again, more than three-quarters of the Group I and II children went directly from high school to the university or to such other institutions of higher education as the teachers' training college or the school of art, as against only a quarter of the Groups III–VI children, the majority of whom entered clerical occupations. As quite a number of children from these latter groups do in fact receive a full post-primary education and proceed to higher studies

[1] *Girl Workers in New Zealand Factories, op cit*, pp. 13–14

[2] G W Parkyn, *Children of High Intelligence A New Zealand Study*, pp. 147 ff (New Zealand Council for Educational Research, Wellington, 1948).

the obstacles cannot be wholly economic; and from a close study of individual cases Parkyn concludes that they frequently consist rather of the parents' lack of understanding of the meaning of intellectual brightness and of the possibilities open to the bright child, of their limited interest in the child's personal development and their small appreciation of the contribution further schooling could make to it, and of other factors of a similar kind The economic problem can certainly be difficult for parents in the lower-income groups—even since the institution of a universal child allowance of ten shillings a week which is payable as long as a child remains at school—but it can usually be solved if the will is there, and without involving really heavy sacrifices

The proportion of boys and girls who leave school early with slim educational qualifications is much higher among Maoris than among Europeans The reasons are many As a group, Maori children begin school rather late, attend irregularly, and are handicapped by their limited grasp of English and of European ways generally Their homes tend to be poor and their parents rather indifferent to success at school and to the whole business of "getting on". The consequence is that large numbers of them leave school with a meagre educational equipment and that partly because of this relatively few enter the skilled trades, clerical work, business, or the professions Some secure steady work in farming and kindred occupations, but it was estimated a few years ago by H C. McQueen [1] that about half "have no prospect of work on the land, and become casual or seasonal workers, idle about their homes between intermittent jobs that lead to nothing permanent". Most students of the problem would agree that it is highly desirable that the Maori occupational distribution should more nearly approximate the European, though there are differences of opinion on the question of degree, and about the methods that should be used. The problem is complicated by prejudice against the employment of Maoris in certain jobs, by the peculiarities of the Maori work pattern, and by many other factors, and can certainly not be solved quickly or easily. On the educational side much is being done to encourage Maori boys and girls to pursue technical and trade courses and to qualify for entry to the professions, and the numbers actually finding their way into such occupations as teaching and nursing have been increasing fairly rapidly.

The Large "Middle" Group

In round figures, 25 per cent of New Zealand children leave school at 15 or very shortly afterwards with no post-primary

[1] H C McQueen, *Vocations for Maori Youth*, p. 7 (New Zealand Council for Educational Research, Wellington, 1941).

education at all or very little of it, at the other end of the scale are those—about 20 per cent.—who gain the School Certificate or some higher qualification. This leaves a large group of some 55 per cent. from whom for the most part are recruited the workers who will eventually fill the very heterogeneous body of occupations that lie below the professional and semi-professional levels but above the level of the less attractive of the semi-skilled and the unskilled jobs. The factors determining the occupation entered in any particular case are, of course, very diverse family tradition and circumstances, previous schooling, the openings present in the home district, the demands of employers, the advice given by a "careers" teacher, the physique, temperament, and abilities of the individual himself—these, and all kinds of other influences and accidents, may play a part The factors determining the degree of success eventually achieved in the occupation are likewise very diverse In some fields the chief one is ability, as evidenced by the capacity to acquire the requisite technical knowledge and skill and by performance in the job itself, in others, notably in the sphere of "free private enterprise", it is no small advantage to have a well-to-do family and the right "connections". And here it may be mentioned that there is in New Zealand a very strong feeling that it should be possible for the able lad who begins at the bottom to make his way to the top In the public service, for example, there is a deep-rooted antagonism towards the principle of an administrative class recruited from those who have graduated after full-time study at the university. Not that this usually means the able lad rises quickly, for the principle of seniority is also strongly emphasised. In the teaching service, for instance, it is almost impossible for a man under forty to become the head of a big primary school Merit alone should count but it is most unlikely that you are much more deserving than I! It should be mentioned, too, that much legislation in New Zealand has been inspired by the desire to reduce the economic obstacles that stand in the way of the advancement of the ordinary man who works in private industry. Legislation severely restricting land aggregation is an example, and the very comprehensive rehabilitation scheme under which large numbers of returned servicemen are being put on farms and into businesses with the financial aid of the State is in some respects another.

The School Certificate—and Beyond

The School Certificate is the minimum educational qualification for entry to a teachers' training college, for clerical work in the public service and in many private firms, and for such careers as school dental nursing, banking, and library work Of the 20 per cent of the school population who gain the School Certificate about half qualify also for entrance to the university, which in practice means

staying at school at least one year beyond the Certificate stage. Very important changes in the conditions of entrance to the university have been made in the last few years, including the introduction of a system of accrediting by the schools Without describing the new scheme in detail one may say that although it is designed in part to raise the entrance standard (and, despite some assertions to the contrary, is probably doing so), it is much more generous than the old scheme in respect to subject requirements. Indeed, the only compulsory subject is English This means among other things that the entrance qualification can be obtained without too much difficulty by moderately able boys and girls who, even up to the Certificate stage, did not contemplate university studies and took courses of a relatively non-academic kind. Here, too, the tendency is to keep open a fairly wide range of vocational possibilities until a fairly late stage.

As already noted, a large number of bursaries and scholarships of various types are available to those wishing to pursue post-secondary studies Selection is sometimes wholly by means of competitive examination In other instances—for example, the bursaries granted to enable students to follow for three or four years a full-time university course in preparation for teaching in post-primary schools—account is taken of the applicant's whole school record and of his apparent suitability for a particular type of occupation Those accepted for entrance to the teachers' training colleges, whether they come straight from high school or after graduation from the university, receive substantial living allowances (usually £185 when the student lives away from home). Many training college students attend their local university college part-time Though entry to the university is relatively easy, and though the possibility of full-time study is no longer confined to those who are either extremely able or who are in a position to pay for it, there is clear evidence (from Parkyn's investigations, for example) that some who do not receive a university education are much more capable of profiting by it than are certain of those who do

In the university itself a further and sometimes drastic process of selection takes place. An analysis of the later careers of pupils passing the university entrance examination in the years 1926 and 1927 showed that only 35 per cent. of those who began a degree ever finished it.[1] The proportion to-day is probably not very different Though a large allowance must be made for students who obtain usable qualifications below the degree level, it is clear that considerable numbers fail to achieve their ambitions. Of the survivors a few proceed to post-graduate work, often in Britain,

[1] W Thomas, C E Beeby, M H Oram, *Entrance to the University*, p 106 (New Zealand Council for Educational Research, Wellington, 1939).

and the remainder, with some exceptions, enter on their professional careers.

The "Selection of Leaders"

The Editors of the YEAR BOOK asked for information about the "selection of leaders" in public affairs, business, industry, the professions, and agriculture Some idea of the kind of process that operates in the field of public life may perhaps be gathered from a consideration of the type of man New Zealanders elect to represent them in Parliament In the rural constituencies the Member of Parliament is likely to be a small farmer over fifty years of age whose schooling has not gone beyond the primary level He has probably lived in his district for many years and become widely known in it through long and conscientious service in local government and in farmers' organisations He is likely to possess some vigour of personality, a good deal of ambition, common sense, and political shrewdness, and to be devoid (or at least apparently devoid) of any qualities—from intellectual distinction to an unusual taste in clothes—that set him any distance apart from the rest of the community The members representing urban constituencies are more varied in their occupational origins lawyers constitute the largest single group, then come trade-union secretaries, then business men. The proportion who have a secondary or university education is higher, but the average age is much the same In public affairs, then, experience and personal qualities count more than ability, and ability more than formal educational attainments (This, of course, is not to deny that there are in politics some men of great intellectual power)

A high proportion of New Zealand's professional men and women are employed in the State services For these, promotion depends in very large measure on the assessment of their competence by their professional superiors In all but one or two Departments of State all appointments except a few of the very highest are made by a Public Service Commission, which is responsible only to Parliament and not to the Government of the day. In the education service, despite the existence of lay local authorities, effective control of promotion and appointments has passed almost completely into the hands of the professionals. The headships of post-primary schools provide one of the very few exceptions, and even here a considerable element of professional control enters in, since the lay school boards that make the appointments can select only from those the departmental inspectors have recognised as eligible More than this, both public servants and teachers possess rights of appeal against their classification (which determines their prospects) and against "non-appointment". Professionals, of course, can be swayed by prejudice and may be taken in by bluff, and the most enlightened of them often have to bow

to the claims of seniority, which, as already mentioned, are so strongly asserted by the rank and file of the various services. But in spite of such more or less inevitable imperfections the system is one that places a high premium on proved ability If it sometimes elevates to positions of leadership the adroit careerist rather than the equally able man with a real sense of vocation, that is a failing that it shares with many other systems. The position achieved by the professional man in private practice also depends largely on his ability and industry, but his class affiliations are not unimportant, nor, at the beginning of his career, is the possession of the money required to buy a partnership or set up in practice on his own account

"Leaders" in business, industry, and agriculture fall into two main types There is the man who, openly or behind the scenes, exerts a powerful influence on the policies pursued by his fellow employers in their relations with the Government, political parties, and the trade unions He is likely to be more than usually successful, able, tough, and energetic, he may easily be a "self-made" man, but will sometimes owe his position in part at least to inherited wealth and family influence.

Secondly, there is the man who makes his impact on the actual processes of production and distribution—the farmer or business man who successfully develops new techniques, the skilful organiser of the "managerial" type, the research scientist whose work results in the fuller exploitation of natural resources In New Zealand, where State departments are so intimately concerned with economic life, and where the great volume of agricultural and industrial research is done in State-supported agencies, no small proportion of these leaders are salaried officials. They must in any case be men who possess both ability and considerable technical knowledge They therefore tend to emerge in much the same way as do leaders in the professions.

Conclusion

In New Zealand, then, access to post-primary and higher education is remarkably easy. If there are still young people who, for lack of qualifications they could have acquired easily enough, earn their living in occupations that give little scope for their talents, the main causes are probably now to be found not in economics but in influences beyond the reach of legislation—for example, parental indifference to the child's vocational future We have seen, too, that in many occupational fields advancement depends primarily on capacity to do the job The tendency of ability to find its appropriate occupational level is therefore very marked—and is becoming increasingly so—and there is consequently much movement up and down the social scale. Yet because the scale is a relatively narrow one, and because neither hope of great wealth nor

fear of poverty is present in the mind of the average New Zealander, the process is not usually marked by any fiercely competitive spirit. This, at all events, is the situation at a time of full employment and economic prosperity and under the existing regime of social-security legislation.

A. E. CAMPBELL.

Note.—As this article may have suggested, some aspects of the process of occupational selection as it operates in New Zealand have been studied fairly thoroughly, though even here little of the information available is completely up to date. Other aspects of the process, not always the least important, have not been seriously studied at all. The writer of the article has therefore sometimes been forced to rely on fragmentary information and personal impressions.

CHAPTER FIVE

SOUTH AFRICA

THE complexity in South Africa of the problem under discussion is such that within the limits of a short article little more than a very general analysis may be attempted and much of importance must of necessity be omitted This will be clear when it is realised that in considering the relationship of education and occupational distribution in South Africa four major factors must be given due regard

(*a*) The diversity and complexity of occupations for which educational facilities are needed has undergone a rapid evolution in comparatively recent times. Since the end of the nineteenth century South Africa has undergone a profound change in its economy, its political structure, and its communications;

(*b*) we have a multi-racial and multi-cultural society, and the impact of the industrial revolution on different groups has been different, having been modified by diverse political, economic, and social forces of considerable magnitude,

(*c*) different school systems for Europeans, Natives, Coloured, and Indians have evolved, and

(*d*) there are four provincial education departments and one Union Education Department. Each of these five departments is concerned with the education of all the racial groups mentioned above.

The economic history of South Africa falls into two main periods: the first extends from the foundation of the Cape in 1652 until the discovery of diamonds (1867) and of gold in the Witwatersrand (1886), the second period may be said to date from the 'nineties until the present day.

During the earlier period the most widespread industry was that of the pastoralist, who was able to subsist almost entirely on his own products. Gradually a trade grew up, mostly in wool and hides. The cultivation of vines and wheat was limited to a relatively small area of the South-western Cape. With the opening of the diamond mines, railways were built inland from Capetown. During the 'nineties, South Africa, "consisting of two British colonies and two almost independent Republics, comprised a total area of 470,000 square miles. Two-thirds of this area had, in

1891, a population of less than two persons per square mile, and the other third was more thickly populated only because it was inhabited by the Natives living under their own tribal organisations. Only in the immediate neighbourhood of towns did the white population exceed four persons to the square mile, and these neighbourhoods were limited to four in number in 1891 and to five in number within the next two or three years, when Johannesburg was added" [1]

The development of the Witwatersrand goldfields and the diamond mines ushered in a new era characterised by a shift of population to the hitherto sparsely populated interior. Railway lines were built and communications opened up. After the Anglo-Boer war of 1899–1902 a network of branch lines was built to open up and develop the agricultural and pastoral resources of the country Secondary industry grew up under the stimulus of the gold industry, and this tendency was vastly stimulated by the two world wars.

European Education and Occupational Distribution

The Europeans have been the dominant political group in South Africa and consequently their reaction to economic forces and opportunities has been complete and unlimited As we shall see below, this was not the case as far as the non-Europeans were concerned, and their reaction to the industrial revolution was tempered and controlled in many ways by the action of the Europeans

During the seventeenth and eighteenth centuries South African society was remarkably simple in its structure There were no great social differences, no nobility, and very few economic or educational distinctions Education was a simple matter aiming chiefly at the inculcation of religious beliefs and doctrine. As a consequence it was equally important to the burghers to see that their household slaves were sent to school as it was that their children should go Education had little or no economic significance and in the ordinary schools there was no colour bar The coming of the English settlers in 1820 made little difference to the social stratification of the society, for they were traders and farmers, too.

Even as late as 1877 formal education in the schools had little economic significance for the population as a whole. What a boy had to learn about his future vocation was taught to him outside the schools and on the job The very minor role of the schools in the life of society may be gauged from the following table.

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[1] R. Goodfellow, *Economic History of S. Africa.*

TABLE I

PERCENTAGE OF CHILDREN OF SCHOOL-GOING AGE IN PUBLIC SCHOOLS IN 1877

Cape Colony .	49
Natal	60
Orange Free State	12
Transvaal	8

It was estimated that the average school life of a pupil was two years

An excellent idea of the general educational standards of the nineteenth century is afforded by a consideration of the training of teachers In 1859 a system of training pupil-teachers was introduced This was really a system of apprenticeship for five years In 1873 a teacher's diploma was introduced, and in 1883 there were 292 candidates Admission to the course demanded a Standard IV certificate and the training lasted three years.

There was, of course, a certain amount of higher education, and in the Cape Colony there were five colleges at which post-matriculation classes were conducted In 1883 there were 76 students, 62 studying for the B A degree and 14 students of surveying In 1891 this number had grown to 243 of whom 58 were law students

Until 1886 the economic activities of South Africa were of such a simple, uncomplicated nature that there was little or no call for a high standard of scientific or technical training The discovery of diamonds in 1871 had led to some developments in mining, but at that time the only workshops in existence were those attached to the Cape Government Railways. For years after the opening of the diamond fields the mining operations were of an extremely primitive nature. Such engineers as were required were imported from overseas, and mining itself was not regarded seriously as a promising field of employment for intelligent young South Africans. The discovery of the Witwatersrand goldfield, however, changed this position very radically. The gold mines not only developed rapidly, creating lucrative employment possibilities for the technical experts who were needed to overcome the problems of gold mining, but led to many other developments throughout South Africa

An interesting result of the impact of industrialisation upon South Africa was the increasing number of Europeans who persisted in following out-moded farming methods and were unable to adapt themselves to the changed economic conditions of the twentieth century. In 1932 a report was issued by the Carnegie Commission on the Poor White Question in South Africa. The Commission estimated that there were in 1929–30 no fewer than 300,000 Poor Whites out of a total of just over 1,800,000 Europeans. The *Report* stated.

> The economic and social decline here discussed is particularly noticeable among the white population of the older settlement Among these, as late as the end of the seventeenth century, Dutch-speaking farmers predominated, and so most of the poor whites belong to this group, being therefore mainly of Dutch-French-German extraction A comparatively small proportion, however, are of British and Irish descent, while we find the same typical forms of retrogression among some of the English-speaking community who have settled in South Africa for many years
>
> The economic decline has been caused principally by inadequate adjustment to modern economic conditions among a portion of the older white population of South Africa .

One of the most important results of the *Report* of the Commission was the emphasis it placed upon the need for linking the school with vocational education and vocational guidance and also the attention it focused on the educational needs of the country districts.

The tremendous demand for labour and the excellent employment prospects which characterised the late 1930's and the period of the war have virtually resolved, along with other favourable factors, the Poor White problem, at least for the present.

Factors which make for Equality of Opportunity

The Structure of the Educational System

(1) The S A educational system is more akin to the continuous-ladder system obtaining in America than to the English or Continental systems. Roughly the 8–2–2 plan prevails The South African child spends on the average eight years in a common primary school, which ends with Standard VI. Of the children who begin school at any given time about two-thirds complete Standard VI. Of the third who have left school, some left owing to economic reasons, some because of lack of interest, or being over age, and about 10 per cent owing to lack of innate ability to profit by the type of education leading to or required by the Standard VI examination. Secondary education begins with Standard VII, and lasts four years At the end of the second year a Junior Certificate Examination may be written Until 1931 the requirements for the matriculation examination were very rigid and every candidate was required to study mathematics. Since then the freedom of choice of subjects has been increased considerably

In general, the South African system has striven to delay specialisation in schools and curricula, and to provide a single-ladder system of schools At the later stages of the school system a choice of subjects has been introduced. Reference to Table II shows the general nature of the organisation. Space allows of no critical comment on the working of the system.

(2) Education is compulsory for all European children between the ages of 7 and 16 (15 in Natal), but the upper limit is not

enforced in the Cape and Natal if the pupil has passed Standard VI, or in the Transvaal if the pupil has passed Standard VIII. In the Orange Free State there is now no scholastic limit for exemption.

(3) Education is free within the compulsory limits though private schools and a few State schools in the Cape Province, Orange Free State, and Natal do charge fees. A certain amount of free education is also provided for pupils beyond the compulsory limits, no fees being charged, with the exceptions noted above, in the Transvaal, Natal, and Orange Free State up to the end of secondary school.

Assistance to pupils is also available in the following forms

In the Cape, tuition fees for indigent secondary pupils are remitted. Remissions allowed at individual schools are limited to 40 per cent. of the total fees payable in respect of secondary pupils at such schools. Maintenance grants not exceeding £12 per annum plus cost-of-living allowance are paid in respect of primary pupils whose parents or guardians are in absolutely indigent circumstances and who reside more than three miles from the nearest school These are payable while pupils are boarding at approved establishments. Boarding grants (up to a maximum of £22 per annum plus cost-of-living allowance) are available to necessitous primary pupils who reside in approved boarding establishments and whose homes are situated at such a distance from the nearest school as to make it impossible for them to travel daily to and from the school. Boarding bursaries (maximum £20 plus cost-of-living allowance) are available to necessitous secondary pupils under similar circumstances

The cost of school books and requisites issued to indigent primary pupils attending schools under school boards may not exceed 40 per cent of the total value of all issues at such schools. If free issues are made in excess of this percentage the additional cost has to be met by the local authorities. In schools not under school boards similar provisions apply except that the cost of free issues in excess of 40 per cent. has to be met by the school managers themselves In calculating the 40 per cent. mentioned above the cost of books and requisites issued free to pupils in receipt of maintenance or indigent boarding grants is not included.

In Natal, free or part-free admission to Government hostels or grants to enable children to board with private persons are available for all necessitous children. Free books are supplied to all primary pupils, and secondary books in necessitous cases.

In the Free State, indigent pupils who reside three miles or more from the nearest school may be awarded bursaries up to £30 per year, and these are repayable in the case of children over 16 years of age. Books and school requisites are supplied free to indigent children up to 16 years of age.

TABLE II

THE NUMBER OF PUPILS AND STUDENTS, CLASSIFIED ACCORDING TO AGE, IN VARIOUS TYPES OF EDUCATIONAL INSTITUTIONS, 1941

Age	*State and State-aided Primary and Secondary Schools*	*Private Schools (Primary and Secondary Schools)*	*Reformatories*	*Schools of Industries*	*Vocational Schools*	*Technical Colleges*	*Normal Colleges*	*Universities*	*Grand Total*	*Number in Each Age-group, 1941 Census*	*Percentage Number in School of Each Age-group*
-7	19,536	5,778	—	—	—	—	—	—	25,314	—	—
7	36,843	2,200	—	—	—	—	—	—	39,043	41,465	94 16
8	38,443	1,957	—	—	—	—	—	—	40,400	41,153	98 17
9	40,331	2,041	—	—	—	—	—	—	42,372	41,924	101 07[6]
10	41,762	2,079	—	—	—	—	—	—	43,841	44,291	98 98
11	41,212	2,215	1	—	—	—	—	—	43,428	43,909	98 90
12	39,728	2,171	1	—	—	—	—	—	41,900	42,123	99 47
13	38,819	2,093	6	11	6	—	—	—	40,935	42,209	96 98
14	34,744	2,063	13	217	171	2,323[1]	—	—	39,531	40,538	97 52
15	27,181	2,246	20	393	478	1,960	—	20[4]	32,298	40,520	79 71
16	14,639	1,603	26	328	740	3,511	19	302	21,168	39,827	53 15
17	7,080	1,347	29	265	702	4,239	231	1,167	15,060	38,968	38 65
18	2,400	574	50	76	477	4,490	654	1,932	10,653	39,580	26 92
19 and over	904	669	59	26	303	14,258	1,975	7,902	26,096	—	—
TOTAL	383,622	29,036	205	1,316	2,877	30,781[2]	2,879[3]	11,323[5]	462,039	—	—

[1] *Classified as under 15*
[2] *Full-time and part-time, including 4,914 correspondence students*
[3] *Age-distribution estimated from that of 1936*
[4] *Classified as under 16*
[5] *Full-time and part-time, but excluding 1,571 external students*
[6] *Children from outside the Union are included in the total of children at school*

A grant, varying from 10*s*. per annum per pupil in Standard IV to £2 per annum per pupil in Standard X, is given to parents with large families, irrespective of financial position, in respect of the fourth and subsequent pupils in each family.

In the Transvaal, free books and materials are supplied up to Standard VIII.

In all the provinces, primary school pupils receive one free school meal per day, the food supplied being intended to supplement home feeding by the introduction of certain vital food elements

The degree of success in retaining pupils in the educational system up to the age of 16 is apparent from Table II.

The provision of technical and university education has increased rapidly, as the following data show

TABLE III

THE NUMBER OF FULL AND PART-TIME STUDENTS AT TECHNICAL COLLEGES AND UNIVERSITIES, UNION, 1930–46

Year	*Technical College Students*		*University Students*	
	Full-time	*Part-time*	*Full-time*	*Part-time*
1930	3,732	17,681	5,428	1,640
1940	5,681	20,479	9,302	2,004
1946	10,303	32,807	17,184	2,810

University education is open to all persons who have satisfied the requirements of the Joint Matriculation Board In general these requirements are tending to become less rigid

The social composition of university students is chiefly influenced by economic factors, fees having risen considerably in recent years

The average fee per student has risen from £34 3 in 1932 to £49 6 in 1946 Tuition fees vary from £40 for a first-year B A course at some institutions to £80 per year at others £42,838 was available as bursaries in 1946. Taking the average bursary at £50, there was provision for bursaries for 4 3 per cent. of the students.

Table IV gives some indication of the occupational distribution of the fathers of university students While it is not easy to generalise from the data given in Table IV it may be noted that in 1936 the chief occupational groups (male) were agricultural occupations, 178,958, industrial, 140,331, commerce and finance, 101,017, professions, entertainment, and sport, 58,966, transport and communications, 60,114, mining occupations, 27,531, personal service, 10,976, and other, 122,072—a total of 699,965.

TABLE IV

UNIVERSITY STUDENTS CLASSIFIED ACCORDING TO FATHERS' OCCUPATION, UNION, 1938 (SAMPLE GROUP)

Father's Occupation	*No*	*Percentage*
Farmer (own land)	969	25 5
Farmer (hired land)	96	2 5
Farmer (assistant)	10	0 3
Farmer (unspecified) .	98	2 6
Industry .	71	1 9
Commerce	387	10 2
Clerical	214	5 6
Public service	9	0 2
Transport	80	2 1
Military and police	41	1 1
Professional	969	25 5
Labourer .	43	1 1
Retired	175	4 6
Miscellaneous	64	1 7
Unspecified	574	15 1
TOTAL	3,800	100 0

It would appear that the professional group is making the largest proportional contribution of students Commerce is making a smaller contribution than farmers. The economic factor seems to be of major importance in determining the likelihood of children going to a university, but there are, of course, other factors to consider.

TABLE V

THE NUMBER OF STUDENTS DRAWN FROM DIFFERENT OCCUPATIONAL GROUPS, CLASSIFIED ACCORDING TO INCOME OF FATHERS, IN A SAMPLE TAKEN FROM A SOUTH AFRICAN UNIVERSITY INSTITUTION, 1948

Occupation of Father	*Income of Father*							*Total*
	£200	£201–£400	£401–£600	£601–£800	£801–£1,000	£1,001–£1,200	£1,201+	
Farmer on own land	6	12	9	7	3	3	3	43
Farmer on hired land	1	1	—	—	—	—	—	2
Industry	—	1	2	—	—	—	—	3
Commerce	—	—	1	—	3	1	—	5
Clerical .	—	2	2	—	1	—	—	5
Transport .	—	—	2	—	—	—	—	2
Military and police	—	—	—	1	—	—	—	1
Teacher .	—	—	3	4	2	2	2	13
Retired .	1	1	2	—	—	—	—	4
Artisan .	—	1	1	1	2	—	—	5
Unspecified .	1	2	2	1	—	—	—	6
TOTAL . .	9	20	24	14	11	6	5	89

The data given in Table V show the wide spread of the income of parents of university students.

The position in European schools in South Africa may be summed up as follows

The rapid development of the economic system in South Africa has led to an increased demand for trained workers of all types—so great has this demand become that artisans and professional workers had to be imported during the immediate post-war period. This demand is accentuated by the colour bar, for European officials, artisans, and professional workers are used in considerable numbers to organise and administer many of the activities of the non-Europeans.

Within the European group there are many factors making for equality of opportunity free and compulsory education, generous bursary schemes, school feeding schemes, boarding bursaries, etc. The overwhelming majority of European children attend State schools, and the democratic nature of South African society, with its almost entire absence of social castes, makes the State schools an effective instrument in equalising opportunity. There is relatively abundant opportunity for technical and university training, the number of university students per thousand of the European population is 8 5. Vocational guidance is being developed rapidly in order to exploit the intellectual and other qualities of the school population.

Factors which militate against the fullest and most effective use by the educational system of the potentialities of South African youth are largely economic. To these must be added the ignorance of children and their parents of vocational possibilities, as well as certain weaknesses of the educational system which have been investigated by a Commission on Technical Education. The report of this Commission will be released this year. Space forbids any consideration of the weaknesses of the present system in this article.

Native Education and Occupational Distribution

In the original social organisation of the Bantu tribes there were no class distinctions, and all the young men of the tribe were divided into age-groups which went through a common training in the initiation schools The only persons to receive a special vocational education were the various types of "doctors"—witch-doctors, lightning doctors, herbalists, etc.

Increasing contact with and political control by Europeans have caused the Natives to be absorbed into the European economic system as mine workers, agricultural labourers, and a variety of skilled and semi-skilled workers. Except in the case of the mines there is no colour bar embodied in South African labour legisla-

tion, but the influence of social usage has been very powerful in maintaining in most cases a *de facto* colour bar.

A census was held in 1946, but the figures for the occupational distribution of Africans are not yet available. In 1936 the following was the position:

TABLE VI

NUMBER AND PERCENTAGE DISTRIBUTION OF NATIVE PERSONS OF 15 YEARS AND OVER IN OCCUPATIONS, THE UNION, 1936

	Male	%	*Female*	%
Agriculture	1,437,087	62 4	1,659,349	86 5
Mining	393,020	17 1	—	—
Manufacturing	210,407	9 1	3,358	0 2
Transport and communication	90,193	3 9	146	0 01
Commerce and financial	6,447	0 3	242	0 01
Professions, sport, entertainment	17,605	0 8	4,335	0 2
Personal services	112,901	4 9	243,369[2]	12 7
Other	35,411	1 5	8,520	0 4
Total	2,303,071	100 0	1,919,319	100 0
Persons under 15 years	95,063[1]	—	410,362[3]	—
GRAND TOTAL	2,398,134	—	2,329,681	—

[1] *Includes* 80,976 *scholars*

[2] *Of these,* 241,230 *were classified as domest c servants and* 1,137 *as chefs and cooks*

[3] *Includes* 312,048 *in household duties and* 89,603 *scholars*

The above distribution represents a classification of gainfully occupied persons based on an occupational distribution, but it must be remembered that by far the majority of the persons are unskilled labourers This may be seen from the fact that of the group classified under " transport and communication ", no fewer than 87 98 per cent. were enumerated as labourers and messengers The group classified under " professional, sport, and entertainment " included in a total of 17,605 males the following

Policemen	6,711
Prison warders	776
Clergymen and priests	2,429
Religious service (not ordained)	1,069
Teachers (academic)	4,758
Interpreters	258
Hospital orderlies	330
Nurses (male)	253
Witch-doctors	89
Doctors (native)	619
Medical practitioners and physicians	10
Attorneys, lawyers, solicitors, conveyancers	7

Although vocational training is almost as old as Native education, the following table, published by the Interdepartmental Committee on Native Education, shows (*a*) that as long ago as 1882 a considerable variety of trades was being taught, and (*b*) that there has been little expansion in numbers

TABLE VII

THE NUMBER OF NATIVE STUDENTS BEING TRAINED IN VARIOUS TRADES, CAPE, 1882–1932

Year	*Trade*								
	Black-smithing	*Book-binding*	*Carpentry*	*Masonry*	*Painting*	*Shoe-making and Leather Work*	*Wagon-making*	*Tailoring*	*Total*
1882	6	1	119	—	8	24	16	—	174
1905	—	5	188	23	15	12	9	—	252
1912	2	5	162	26	16	22	11	4	248
1922	3	—	118	20	12	13	7	15	188
1932	21	2	192	35	10	28	4	27	319

There have been a number of other schools which have set out to provide industrial training for Natives but they have either closed down or changed the character of their work

Trade unions in South Africa do not admit Natives from industrial schools to their ranks, and as a consequence the Native who has completed a five-years course in an industrial school finds it difficult to establish himself as a tradesman in an urban area. European employers tend not to recognise such training and offer

TABLE VIII

THE NUMBER AND PERCENTAGE OF NATIVE CHILDREN OF EACH AGE-GROUP AT SCHOOL, UNION, 1946

Age	*Number in Population*	*School Enrolment*	*Percentage Enrolled*
6	224,726	20,025	8 9
7	213,080	48,434	22 7
8	212,451	59,737	28 1
9	210,454	62,864	29 9
10	207,257	71,406	34 4
11	203,027	66,434	32 7
12	197,934	74,211	37 5
13	192,642	70,250	36 5
14	186,491	59,907	32 1
15	179,733	45,411	25 3
16	172,617	29,440	17 1
17	165,396	15,343	9 3
18	156,035	8,575	5 5

TABLE IX

THE DISTRIBUTION OF NATIVE PUPILS ACCORDING TO STANDARD, UNION, 1925–46

Year	Sub-Standards A and B	Standard I	Standard II	Standard III	Standard IV	Standard V	Standard VI	Standard VII	Standard VIII	Standard IX	Standard X	Industrial	Unclassified	Total
1925	116,514	24,357	16,722	13,193	9,026	4,670	2,915	422	278	74	63	178	—	188,412
1930	161,860	33,888	23,527	18,069	12,302	7,185	4,930	701	298	139	16	24	479	263,418
1935	204,816	46,507	34,352	26,437	18,013	11,329	8,599	1,390	450	78	37	624	412	353,044
1940	247,375	69,410	47,942	38,384	25,105	16,709	12,174	3,959	1,316	369	164	1,057	60	464,024
1945	301,112	83,785	60,024	50,151	35,092	24,787	18,837	9,209	2,497	604	315	1,124	49	587,586

TABLE X

THE PERCENTAGE DISTRIBUTION OF NATIVE PUPILS ACCORDING TO STANDARD, UNION, 1925–46

Year	Sub-standards A and B	Standard I	Standard II	Standard III	Standard IV	Standard V	Standard VI	Standard VII	Standard VIII	Standard IX	Standard X	Industrial	Unclassified	Total
1925	61 84	12 92	8 88	7 00	4 79	2 48	1 55	0 22	0 15	0 04	0 03	0 10	—	100 00
1930	61 45	12 86	8 93	6 86	4 67	2 73	1 87	0 27	0 11	0 05	0 01	0 01	0 18	100 00
1935	58 01	13 17	9 73	7 49	5 10	3 21	2 44	0 39	0 13	0 02	0 01	0 18	0 12	100 00
1940	53 32	14 96	10 33	8 27	5 41	3 60	2 62	0 85	0 28	0 08	0 04	0 23	0 01	100 00
1945	51 24	14 26	10 22	8 54	5 97	4 21	3 21	1 57	0 42	0 10	0 05	0 19	0 01	100 00

How the above position contrasts with the position in schools for Europeans, Indians, and Coloureds may be gauged from Table XI below

TABLE XI

THE PERCENTAGE DISTRIBUTION OF PUPILS IN EUROPEAN, NATIVE, COLOURED, AND INDIAN SCHOOLS CLASSIFIED ACCORDING TO STANDARDS, UNION, 1945

Racial Group	Sub-standards A and B	Standard I	Standard II	Standard III	Standard IV	Standard V	Standard VI	Standard VII	Standard VIII	Standard IX	Standard X	Not Classfied	Total
Natives	51 24	14 26	10 22	8 54	5 97	4 22	3 21	1 57	0 42	0 10	0 05	0 20	100 00
Coloureds	45 21	14 60	12 38	10 04	7 47	5 00	3 19	1 20	0 69	0 11	0 08	0 03	100 00
Indians	40 82	13 94	12 37	11 52	8 20	6 05	4 53	1 08	0 95	0 29	0 29	—	100 00
Europeans	20 44	10 92	10 73	10 05	9 65	9 88	9 61	7 28	5 14	2 76	2 18	1 36	100 00

wages very little better than those offered to the untrained. In the rural areas a number of Native craftsmen have established themselves, but the numbers are relatively insignificant Briefly, the opportunities for employment are too restricted to encourage the growth of industrial education to any great extent. This does not apply so much to the education of girls in domestic science, dressmaking, laundry work, etc. The rapid development of industry in South Africa is, however, producing an expanding field of employment for the semi-skilled in industry.

Education for Native children is not compulsory, and the percentage of children at school is given in Table VIII.

It will be seen that the largest percentage of any age-group at school is 37 5.

The percentage of Native children completing the primary school course is small, as may be seen from Tables IX, X, and XI (The Standard VI examination marks the end of the primary course and is a public or departmental examination)

Since technical and industrial education has on the whole proved of little value to the Native in finding employment, the

TABLE XII

PERCENTAGE OF NATIVE STANDARD VI PUPILS WISHING TO ENTER VARIOUS OCCUPATIONAL GROUPS, UNION, 1935

Occupation	*Male*	*Female*
(1) *Government employ*		
Teacher	47 83	52 50
Agricultural demonstrator	2 17	—
Clerk	3 85	—
Other	2 71	0 16
(2) *Church employ*		
Minister	6 46	—
(3) *Profession*		
Nurse	—	25 65
Doctor	4 74	0 49
Other	1 55	0 03
(4) *Commerce*		
Shopkeeper	1 31	—
Traveller	0 37	—
(5) *On Land*		
Farmers	9 37	0 55
(6) *Skilled trades*		
Dressmaker	—	9 77
Carpenter	6 09	—
Tailor	2 73	—
Mechanic	2 54	—
Other	4 88	—
(7) *Unskilled trades*	2 05	0 19
(8) *Housewife*	—	6 11
(9) *Other*	1 35	4 55
TOTAL	100 00	100 00

school system has tended to produce mostly teachers and clerical workers. In 1935 some 6,000 Native Standard VI pupils indicated their choice of occupation as Table XII shows

A remarkable fact indicated in Table XII is the selection of pupils from certain occupational strata of the Native male population. This is well demonstrated in the following table

TABLE XIII

A COMPARISON OF THE PERCENTAGE OF ALL MALES ENGAGED IN CERTAIN OCCUPATIONS WITH THE PERCENTAGE OF NATIVE PUPILS IN STANDARD VI WHOSE FATHERS BELONG TO THESE OCCUPATIONAL GROUPS

Occupational Group	*Percentage of Males*	*Percentage of Standard VI Pupils' Fathers*	*Coefficient of Selection*
(1) Teachers, ministers	0 32	17 2	54 0
(2) Indunas and chiefs	0 06	2 5	42 0
(3) Interpreters, clerks, etc	0 08	4 1	51 0
(4) Shop assistants	0 60	4 8	8 0
(5) Artisans and skilled workers	0 46	11 2	24 0
(6) Peasants	53 58	34 6	0 6
(7) Farm labourers	15 57	1 0	0 06
(8) Unskilled labourers	10 07	13 3	1 3
(9) Mine labourers	12 15	1 5	0 12
(10) Police and defence	0 26	3 8	15 0
(11) Hawkers and traders	0 07	1 5	21 0
(12) Domestic service	4 59	2 7	0 6
(13) Others	2 19	1 8	0 8
	100 00	100 0	1

The coefficient of selection is obtained by dividing the percentage of Standard VI pupils whose fathers are drawn from a certain occupational group by the percentage of Native males engaged in that occupation

The occupational group which is contributing most to the Standard VI population, and this is true for classes about Standard VI as well, is, in proportion to its size, the teacher, minister, agricultural demonstrator type, i e the professional class. The interpreter and clerk class ranks second. Chiefs and indunas rank third. It is interesting to note that coefficients of less than one are recorded for peasants, farm labourers, mine labourers, and domestic servants.

It is interesting to see that these coefficients group themselves as follows

Group A	54–42	Teachers, ministers, professional men, interpreters, clerks, chiefs, and indunas.
Group B.	24–21	Artisans, skilled workers, traders, and hawkers.

Group C	15– 8	Police and defence, shop assistants.
Group D.	1 3–0 06	Unskilled labourers, mine workers, peasants, domestic servants, farm labourers.

Group A is comprised of those whose economic position is strongest. Education, too, is necessary both as a tool and to maintain prestige.

Group B is probably little behind Group A as regards economic resources

Group C ranks lower in economic resources and the need for education is less.

Group D is economically the weakest and lives in general a type of life which does not emphasise the need of education This last group is typical of the reserves and rural locations, where money is likely to be scarce and the labour of children is required for herding and domestic duties.

Native education is free up to Standard VI in all four provinces (up to Standard VIII in Natal Government schools), and books are either free or supplied at reduced prices A number of bursaries are available for secondary and teacher training courses. Supplementary school feeding is provided for Native children While all these factors tend to equalise the opportunity for education among Natives, to send a Native child to school long enough to enable him to equip himself for an occupation imposes a severe financial burden on the parents. The number of Natives receiving university education was 329 in 1946

The present position may be summarised as follows race is a major criterion determining both the occupational opportunity and the education of the Native Occupational opportunity is limited but is developing Opportunity is greatest in teaching and clerical occupations, and as a consequence there is a considerable demand for a literary education. Industrial and technical education has not developed very much in nearly a hundred years because the employment open to Native artisans is very limited indeed. Selection is mostly on a socio-economic basis, because there is no compulsory education, and to remain at school means the loss of child labour either on the land or in the home. Only slightly over a third of the population of school-going age is at school, although there is a willingness to attend. Since a very considerable proportion of Native children do not attend school for more than two years, their education has no value in occupational selection.

Coloured and Indian Education

Space does not permit of an analysis of the position of the Coloured and Indian population. In the Cape Province, Indians and Coloureds attend the same schools, in Natal they have their own separate schools, in the Transvaal there are mixed Coloured

and Indian schools and also separate Indian and Coloured schools, and in the Free State there are no Indians. In general, both groups have restricted occupational opportunity and restricted educational provision In the Cape, permissive legislation for the introduction of compulsory education for Coloured children has been passed. In Natal, education for Coloured children is compulsory except in those areas where school facilities are not yet available. Education is free for Coloureds up to Standard VI in the Cape and Standard X in the three other provinces. It is free for Indians up to Standard VI in the Cape, Standard V in Natal, and Standard X in the Transvaal. The general economic position of Coloureds and Indians, together with restricted occupational opportunity, has limited the influence of the schools very considerably and has tended to concentrate their efforts to the production of teachers and those persons likely to benefit from a literary education Vocational education except for teachers, when contrasted with the provision made for Europeans, is relatively undeveloped. (For a description see *Handbook on Race Relations,* Institute for Race Relations, Oxford University Press, 1949)

P. A. W. Cook.

CHAPTER SIX

INDIA

Introduction

INDIA attained full independence only a few years ago. It is thus difficult to write with any finality about the educational system of a country when its whole social, economic, and political structure is in a process of transition While the old system which was prevalent under the British rule has not yet completely disappeared, new plans are already being put into operation in some parts of the country. But the educational problem in the country is of such a great magnitude that it will take years before the whole country can reconstruct its educational system.

India has definitely accepted in its draft constitution and otherwise the democratic way of life and, therefore, the relationship between its education and occupational reorganisation has acquired a special importance and needs a new orientation. In a democracy every individual is expected to have an equal opportunity to develop his abilities to the fullest extent so as to be able to play his proper role in the society of which he is a member Democracy postulates not an equality of ability but an equality of opportunity. An *identity* of abilities or opportunity is neither possible nor even desirable and necessary. There will always be in every country a large number of varied occupations to suit the variety of capacities found in different individuals. It is the function of education first to discover a person's special aptitudes and then to train him for the profession from which he may derive maximum personal satisfaction and which may, at the same time, be of the greatest use to the group to which he belongs. Society can attain stability only when each person can exercise his powers in doing something that he feels to be useful both to himself and to the community, and the nature of his ability and his work are properly equated

One of the urgent tasks of social reconstruction, therefore, is to find for every person work which is satisfying to him. The humblest job can give satisfaction to the worker provided it suits his capacity and is regarded by him as worthy of doing. A worker acquires a measure of personal dignity if he feels that he is performing a *necessary* function in society and is successful in the discharge of his duties. Moreover, satisfaction derived from the successful accomplishment of a useful task is a real value in

making a person happy Education is one of the important means of discovering the capacities of a person and of guiding him to a suitable vocation.

Before discussing the relationship of education to occupation in India, it is desirable to have some idea about the present position with regard to the distribution of the population in different occupations

Occupational Distribution

The following table gives the percentages of total population dependent upon various types of occupations, since 1911

	Classification of Occupation	1911	1921	1931
A	*Production of Raw Materials*	72 4	73 15	67 1
	(1) Exploitation of animals and vegetation	72 2	72 98	67 0
	(i) Pasture and agriculture	71 5	72 43	Not available
	(ii) Fishing and hunting	0 7	0 55	—
	(2) Exploitation of Minerals	0 16	0 17	0 1
B	*Preparation and Supply of Material Substances*	18 5	17 59	16 6
	(iii) Industry	11 2	10 49	9 7
	(iv) Transport	1 5	1 37	1 5
	(v) Trade	5 6	5 73	5 4
C	*Public Administration and Liberal Arts*	3 3	3 12	3 0
	(vi) Public Forces (Army, Navy, Air Force, and Police)	0 73	0 69	0 5
	(vii) Public administration	0 82	0 84	0 8
	(viii) Professions and liberal arts	1 0	1 59	1 7
D	*Miscellaneous*	5 5	6 14	13 3
	(ix) Persons living principally on their incomes	0 17	0 15	—
	(x) Domestic service	1 4	1 45	—
	(xi) Insufficiently described	2 9	3 51	—
	(xii) Unproductive	1 0	1 03	—

The census for 1941 has omitted this classification, and so the latest figures available in this connection are those of the 1931 census quoted above The most noteworthy fact in this connection is that 67·1 per cent. of the population is supported by agriculture and animal husbandry Industries maintain 9 7 per cent and trade and transport 5 4 per cent. and 1 5 per cent respectively.

As the basis of classification has been changing at the time of every census, it is difficult to generalise with any certainty about the changes in the occupational distribution of the people. There appears, however, to have been little change since 1891 in the proportion of the population dependent upon agriculture. A slight increase is observable in the number of persons engaged in trans-

port, due to the development of motor traffic, and also in those engaged in liberal professions because of an advance in education. (See Bibliography 1, p. 65)

The most distressing fact about our country is that for a large mass of the population there is no productive employment. The following figures indicate the present position and trend of unemployment in India

UNEMPLOYMENT IN INDIA

The Year of Census	*Total Able-bodied Male Population aged 10 to 60*	*Total Non-working Able-bodied Male Population aged 10 to 60*	*Percentage of Able-bodied Men out of Employment*
1901	103,121,700	7,308,464	7 1
1911	109,862,123	8,336,702	7 6
1921	112,120,767	11,510,924	10 3
1931	124,015,009	17,720,365	14 2

The above figures show that in 1931 the total number of the able-bodied male population between the ages of 10 and 60 was 124,015,009, while that of the non-working able-bodied male population between the ages of 10 and 60 was 17,720,365 Thus the percentage of unemployment comes to about 14 2 In addition to these, out of a large number of those regarded as employed in agriculture, about 110 million are, as a rule, unemployed for a considerable period every year The figure of total real unemployment in India would thus be very high indeed (13, p 64).

An overwhelming majority of the employed people is dependent on agriculture. Economic progress all over the world has been marked by a comparative reduction in the number of those dependent on agriculture and a corresponding increase in those engaged in trade, transport, and industry. An exclusive dependence on agriculture is an index of unbalanced economy and is one of the most important causes of poverty.

DECLINE IN THE PROPORTION OF INDUSTRIAL WORKERS TO THE TOTAL POPULATION IN INDIA IN 1941

	1911	1921	1931	1941 (*Estimated*)
Population (in millions)	315	319	353	400
Working population (in millions)	149	146	156	170
Persons employed in industries (in millions)	17 5	15 7	15 3	16 0
Percentage of workers in industries to the working population	11 0	11 0	10 0	9 4
Percentage of industrial workers to the total population .	5 5	4 9	4 3	4 0

As the figures in the table (2) on p. 393 show, there has been a gradual decline in the relative proportion of industrial employment, both large- and small-scale, to the total working population.

The Main Causes of Economic Stagnation

Let us now discuss some of the causes that have been responsible for this uneven distribution of the population over occupations and for the general economic stagnation in this country.

The political subjection which India suffered for about one hundred and fifty years was to a great extent responsible for the industrial backwardness of the country. When the British came to India, a large proportion of the population was engaged in various local industries The traders of the East India Company had come here to establish their trade and find a market for their goods. So it was never their policy to foster existing Indian industries The unjust commercial policy of England discouraged, nay, ruined, the manufactures of India in order to promote British industries (3, pp 195–269) For centuries, before the British period, India had been a great industrial country; but in the vital period between 1770 and 1860, when especially in Britain and in other European countries generally technology made rapid strides, she lagged behind. Round about 1800, there was a far-reaching revolution in her economy. Instead of being an important industrial workshop, India was gradually changed into one of the world's richest raw-material-producing regions (12, pp. 181–3) This naturally led to an overcrowding in agricultural occupation, with its inevitable consequences of unemployment and poverty.

Another factor which has been a dominant force in the life of the Indian people is religion. It has influenced their life, their habits, their thoughts and attitudes—indeed, their whole way of living—for nearly forty centuries. They have always regarded the quest of the spirit as the supreme, the final goal, and the present life as only a preparation for the life to come. For this reason the pursuit of power and pleasure, wealth and glory, has never been the guiding motive among Indians in the same sense in which it has preoccupied many other nations " From the beginning of her history India has adored and idealised, not soldiers and statesmen, not men of science and leaders of industry, not even poets and philosophers who influence the world by their deeds or by their words, but those rarer and more chastened spirits whose greatness lies in what they are and not in what they do, men who have stamped infinity on the thought and life of the country, men who have added to the invisible forces of goodness in the world" (5, pp. 34–5). It was for this reason that the " economic motive " never became the determinant factor of human conduct in Indian society.

Again, the social organisation of the Hindus, which is based on

the caste system, has also to some extent affected the material progress and the economic development of the country. The caste system is a degeneration of the class idea and developed in its present form as the Indian society became decadent. It was a four-fold organisation meant to solve certain important educational, political, economic, and labour problems of society (6, pp. 156–63). It performed the very important function of handing on, from generation to generation, those patterns of skill, knowledge, and behaviour which are usually known as culture The caste generally functioned as a guild or trade union through which craft secrets were safeguarded and perpetuated (7, pp 99–100). But, when birth acquired a great importance, these classes or orders degenerated into castes and a rigid social stratification of society set in Birth began to determine irrevocably the whole course of a man's life—his social relationships, social position, and occupation. His caste chose his occupation, and if he disregarded it, he had to suffer the most severe penalty—social ostracism He became an outcast and, as a result of this, he lost his social position and the sense of social security Most of the castes were associated with particular occupations Man was not free to choose his occupation—he must adopt his father's occupation, which was also the traditional or ancestral occupation He must, further, marry in the same caste so that the heredity of function might be reinforced " Fifty years ago," writes Sir Edward Blunt, " the control of the Panchayats in professional matters was nearly as complete as that of the Council of an ancient Guild They fixed the wages of labour, the hours of work, and the prices and output of commodities They regulated trade processes and methods they tried offences against caste custom, they arbitrated in disputes between members, they engineered strikes and boycotts when their subjects were oppressed " (4, pp 69–70, article by Sir Edward Blunt).

The economic results of the caste system, which exercised such a rigid control over the life of the individual and which led to social stratification, were far-reaching The caste system undermined self-reliance and enterprise among people. It also led to a great waste of labour by preventing co-operation among the members of different castes. It stood in the way of that social mobility which keeps the social organism healthy and progressive, and thus became a great hindrance to material progress (1, pp. 46–9)

In recent years, however, important social and cultural movements have developed which have brought about a change in the attitude of the people. Individuals with a vision and a sense of social justice like Buddha and Mahavira had always revolted against this social evil, and in our own times Mahatma Gandhi raised his powerful voice against it. As a result of these movements, the " high "-caste Hindus have become more tolerant of the

lower castes and some of them, at least, have been trying to improve their general condition, their customs, and their social standards. On the other hand, due to a general political awakening, the "depressed" and backward classes are also questioning the right of the high-caste Hindus to subject them to social, economic, and civil disabilities, to keep them in bondage, and to exploit them economically. Thus there is a strong tendency among persons belonging to the lower castes to press their claims for higher social status This often results in their relinquishing their traditional occupations (8, pp 193–6).

The new social and economic forces have also been working to weaken the authority of this ancient custom. The impact of the West, the rise of industrialism and decline of handicrafts, the British judicial system which established the great principle of equality before law, and the pressure of modern living conditions are loosening the grip of the caste system (9, pp 37–9). There is a marked tendency among the people to abandon their traditional occupations and earn their livelihood through occupations other than those of their ancestors (10, pp 21–2).

After this brief review of the social and cultural environment, which has exercised a profound influence on the economic activities of the Indian people, it will be appropriate to examine how and to what extent the educational system prevalent in India helps the youth in selecting occupations suited to their aptitudes and temperaments For this purpose, it would be useful to give a brief review of the educational system prevalent in India

The Present Position

In 1921, when the new constitutional reforms were introduced, education in India became a transferred subject and was placed under the charge of a Minister responsible to the Provincial Legislative Council. The Government of India ceased to exercise any direct control or supervision over education in the provinces

Primary Education

Primary education is mainly the concern of District and Municipal Boards, although some primary schools are maintained by the Government and private bodies also Except in a few areas, attendance at school has been and still is on a voluntary basis. Calculations on the basis of 1931 census show that the percentage of the children of school-going age (i e. between the ages of 6 and 11 years) to the total population was approximately 12, while the percentage of pupils attending all types of schools to the total population was only 5 2 (14, Vol. I, p. 13). The same percentage continued in the year 1944–5 (15, p. 3).

As early as 1929, the Hartog Committee, which was appointed

to report on the growth of education, pointed out that there was appalling waste and ineffectiveness throughout the whole educational system at the primary level There is a sharp and successive decline in numbers as we pass from Class I to Classes IV and V of the primary stage. The following educational statistics for British India for 1936–7 indicate that there has been very little improvement in checking this waste

Academic Year	*Class*	*Number of Students*
1933–4	I	3,863,319
1934–5	II	1,736,781
1935–6	III	1,361,521
1936–7	IV	1,070,360

Thus we see that out of every 100 pupils that joined Class I in 1933 only 28 reached Class IV in 1936 (14, Vol I, p 131)

Premature withdrawal of children from schools has been one of the most important causes of this waste of educational effort Children belonging to the labouring and agricultural classes are taken away from school as soon as they are old enough to be employed Sometimes the employment is outside the family, but in a large majority of cases the employment is in the family itself (16, p 11)

A survey bearing on this point was carried out in a district of the United Provinces A few schools were selected at random to investigate the extent and nature of the occupations of the children attending primary classes The following table [1] shows the result of this investigation

Classes	*Those Boys Who Help*				*Those Boys Who Do Not Help*	
	Number of Those Who Work Almost Independently	*Their Percentage*	*Number of Those Who Only Help*	*Their Percentage*	*Their Number*	*Their Percentage*
Infant	36	4 8	193	25 9	516	69 3
I	36	7 2	166	33 1	299	59 7
II	45	12 4	189	51 9	130	35 7
III	49	15 9	143	46 2	117	37 9
IV	29	11 5	129	51 2	94	37 3

[1] S N Chaturvedi *An Educational Survey of a District,* pp 107–8, cited in the *Report on Stagnation and Wastage in Primary Schools,* submitted to the Government of Bombay by the Provincial Board of Primary Education.

Another study made in 1934–5 of about three thousand children in thirty-four villages of the Dharwar Taluka in the Province of Bombay showed that 82 per cent. of boys and 62 per cent of girls could not attend schools on account of economic difficulties (17, pp 4–5). These facts reveal that the main factor which prevents children from attending schools is economic. The average parent is so poor that his economic necessities compel him to employ his children in some form of labour as soon as they are old enough to be able to do some work They either tend the cattle or take care of a younger brother or sister at home while their parents are busy on the farm or elsewhere They also work sometimes as shop assistants or domestic servants In this way the children in India perform an important economic function in the household.

Secondary Education

There are two parallel systems prevalent at the secondary stage, usually described as Anglo-vernacular and vernacular While the former is meant to lead to higher education in colleges and universities, the latter is designed to be largely a complete course in itself. In the Anglo-vernacular schools English is a compulsory subject, whereas in the vernacular schools instruction is given through native languages, though English may be taken as an optional subject in some of them. Vernacular education was meant primarily for the rural population and Anglo-vernacular for the urban population (14, Vol I, p. 77). "Anglo-vernacular schools are supposed to suit the needs of urban and vernacular schools those of rural areas. Boys reading in Anglo-vernacular schools are supposed to be superior to those reading in vernacular schools The outlook of the two, their modes of life, and their aspirations are affected by this attitude The sense of inferiority under which the vernacular schools labour leads them to copy the courses and syllabuses of Anglo-vernacular schools and to neglect the realities of country life with which education should be linked up" (18, p. 35).

The table on page 407 explains the scheme of classes in various provinces for the year 1936–7 (14, Vol I, p. 77).

It will be seen from the following table (19, p. 53) that in 1940–1, 71 4 per cent of the students attending secondary schools were going to the English middle schools and high schools and only 28 6 per cent to the vernacular middle schools. It will be further seen that there is a gradual decline in the enrolment of scholars in the vernacular schools and a gradual increase in that of the Anglo-vernacular schools

	Total Number of Scholars				
	1936–7	1937–8	1938–9	1939–40	1940–1
High school	1,054,484	1,117,991	1,175,250	1,255,888	1,326,127
English middle schools	508,344	542,012	581,368	637,265	640,851
Vernacular middle schools	725,044	732,885	748,410	766,048	787,261
GRAND TOTAL	2,287,872	2,392,888	2,505,028	2,659,201	2,754,239
Percentage of students reading in English middle schools	68 3	69 4	70 1	70 4	71 4
Percentage in vernacular middle schools	31 7	30 6	29 9	29 6	28 6

The fees charged from the pupils in the Anglo-vernacular schools are also much higher than those charged in the vernacular schools The average amount of fees per pupil for the whole of British India in 1936–7 was Rs 22 2 in the Anglo-vernacular secondary schools and Rs 1 4 in the vernacular secondary schools (14, Vol I, p. 97)

NUMBER OF STUDENTS IN THE LOWEST CLASS OF THE HIGH STAGE EXPRESSED AS A PERCENTAGE OF THE NUMBER IN THE HIGHEST CLASS OF THE MIDDLE STAGE IN 1945–6 IN THE VARIOUS PROVINCES AND ADMINISTERED AREAS OF BRITISH INDIA

Province or Administered Area	1945–6
Assam	60 0
Bengal	73 3
Bihar	47 5
Bombay	42 5
C P & Berar	76 4
Madras	57 0
N W F P	48 6
Orissa	78 4
Punjab	64 0
United Provinces	84 7
Sind	52 6
Ajmer-Merwara	87 6
Baluchistan	Figures not available
C & M Station, Bangalore	86 1
Coorg	68 8
Delhi	62 2

The children who enter a primary school pass through the middle stage to the highest class of a high school as a normal course Parents have little choice in the type of education which they want to give their children There is a uniform flow of pupils from the middle to the high stage, and hardly any diversion from secondary schools either into practical life or into vocational institutions (26, p 104) The second table on p. 399 [1] shows to what limited extent pupils are diverted from the general stream of education at the end of the middle stage

The main reason for a uniformity of courses in English middle and high schools is that the Matriculation Examination is at once a qualification for Government service and for entrance to the university, which a student joins primarily for the degree which has hitherto been regarded as the only "passport to the safe career of Government employment, and to the great lottery of the legal profession with its rich prizes" (11, p 45)

A series of bodies such as the Hartog Committee in 1929, the Punjab University Enquiry Committee of 1932–3, the Delhi Universities Conference of March 1934, the United Provinces Unemployment Advisory Committee in 1939 have made various proposals for reforming secondary education All these bodies were agreed that the existing single-track system of secondary education was defective and could be remedied only through diversified courses of studies at the secondary stage It was necessary to make that stage more practical and complete in itself and more closely related to the vocational requirements of students with different interests and aptitudes But their proposals and recommendations, quite good in themselves, have remained on paper, and the narrow, academic traditions of the secondary school have not been seriously modified

Reorganisation of Primary and Secondary Education

It was in 1937 that Mahatma Gandhi published his suggestions for educational reconstruction on the lines of what has come to be known as Basic Education, which aimed at a complete reorientation of education The central idea of this plan was that education should be free and compulsory for a period of seven years, and that the process of education throughout this period should centre round some form of manual and productive work.

The Central Advisory Board of Education prepared a plan for post-war educational development in India which was published in 1944 This plan embodies some of the ideas of Mahatma Gandhi, and may be briefly summarised as follows

(1) Basic education (primary and middle) should be universal,

[1] Through the courtesy of the Ministry of Education, New Delhi

compulsory, and free for all boys and girls between the ages of 6 and 14

(2) It should consist of two stages: (a) junior (6 to 11 years) and (b) senior (11 to 14 years) The first stage of education was to be common to all, but the second stage was meant primarily for those who would not proceed to a high school and, therefore, needed seven years' integral education.

(3) The normal age for diversion and admission to the high school should be about 11, but there should be a possibility of pupils joining at the age of 14 also The high school stage should cover six years and be complete in itself.

(4) Entry to high schools should be on a selective basis, and promising children (about 20 per cent. from junior schools) should be admitted

(5) The high schools will be of two main types (a) academic high schools and (b) technical or vocational high schools, the latter specialising in applied sciences, agriculture, and industrial and commercial subjects

This report has been generally approved by the Government of India and Provincial Governments, which have prepared their five-year plans in the light of its recommendations and have already started implementing them (20, p. 41)

University Stage

At present our students have very few alternative courses open to them after having passed the high school examination, and so they try to carry on higher education somewhat aimlessly by joining the intermediate classes

PERCENTAGE OF STUDENTS IN THE FIRST INTERMEDIATE CLASS TO THE NUMBER PASSING THE MATRICULATION OR SCHOOL FINAL EXAMINATION

Province or Administered Area	1945–6
Assam	59 3
Bengal	56 8
Bihar	46 1
Bombay	48 4
C P & Berar	36 6
Madras	33 6
N W F P	33 2
Orissa	58 7
Punjab	39 0
Sind	54 6
United Provinces	53 7
Ajmer-Merwara	57 2

The figures [1] reveal that the Matriculation Examination is not regarded by the majority of students as a distinct stage by itself, but only as a gateway leading to collegiate and higher education

The universities in India are, generally speaking, a preserve for the middle and upper classes. Their doors are largely closed to all those who cannot pay the prescribed fees. It is true that some of the universities make arrangements for scholarships and free tuition, but the cost of university education is, on the whole, prohibitive for poorer students of real ability.

An analysis of the university finances for the year 1945–6 shows that, out of their total income, 36 6 per cent comes from Government, 39 1 per cent from fees, 4 per cent from endowments, and 20·3 per cent. from donations and other sources (27). These figures reveal that the fees are the largest source of income to the universities and the permanent income from endowments is almost negligible. The universities are often faced with financial insecurity, with the result that they have to raise their fees. It means, in effect, that the door of the university is open only to the children of well-to-do parents, while the children of poor parents, even if talented, are debarred from taking advantage of its service.

Most of our young men who go to a university are guided by the desire to secure some appointment or other in Government service. They think of private service or some other profession only when they fail to secure a Government post (21). It is for this reason that the majority of students flock to arts faculties The following figures (19, pp. 67–8) for 1940–41 show that the number of students in arts faculties was out of all proportion to that in other faculties

NUMBER OF STUDENTS IN DIFFERENT FACULTIES

Year	*Arts*	*Science*	*Law*	*Medicine*	*Engineering*	*Education*	*Commerce*	*Agriculture*	*Other Faculties*
1940–1	12,741	3,421	2,909	885	341	1,414	951	294	114

This means that, out of the total number of students, 55 3 per cent. go to arts, 14·8 per cent. to science, 12 6 per cent. to law, and 17·3 per cent. to all other faculties.

A tragic feature of the contemporary situation in India is that all these university graduates are not absorbed by the society.

[1] Through the courtesy of the Ministry of Education, New Delhi

Unemployment amongst the educated class is widespread in India. No statistics of unemployed graduates are available, but our estimate is that about 20 per cent may be taken as absolutely unemployed. Those inadequately or unsuitably employed would probably exceed 50 per cent. This means that only about 30 per cent of the university graduates are able to secure employment of a type which is in keeping with their attainment or commensurate with the time and money which they have spent on their education.

Recruitment for Public Services

Available information with regard to the methods of selection of persons for Government services—all India as well as provincial—is inadequate. Moreover, the services are being considerably reorganised since the country attained her independence. It is, therefore, hazardous to draw any definite conclusions.

There is at present a Public Service Commission at the centre and in each of the provinces which controls federal and provincial services respectively The normal age-limit for entry into Government service is 25 years, and the minimum qualification a university degree, both of which may be relaxed in certain special circumstances, e g in the case of the backward classes Candidates are usually selected on the basis of a competitive examination and personal interview

Conclusion

This brief review of the educational position in this country shows that there has been so far very little intelligently planned correlationship between education and occupational distribution in India People take up occupations not from choice but from economic necessities Interest or aptitude is not the determining factor in their choice of occupation, subject to caste restrictions, where they operate, any occupation which would help them to earn a living is accepted.

It is true that many of the difficulties and evils in the country are due to the faulty system of education, which does not take into due account either the individual bent of mind or the needs of practical life But we should remember that education alone is neither responsible for nor can it remedy all these evils. In fact, the scope and quality of education itself depends to a large extent on the economic conditions of the country and, unless necessary changes are brought about in the latter, the former by itself is not likely to bring about social reform

The schemes of educational reconstruction that have been formulated in recent years necessarily envisage certain basic changes in the economy of the country. The immediate problem is that of poverty and the low standard of living of the people. Poverty must be eradicated and the general standard of living raised in

order to make educational reform possible as well as fruitful A scientific plan must be worked out to relieve the excessive pressure on land and to provide new industries, services, and utilities to employ the surplus population This reconditioning of our entire economy must go on side by side with the reorganisation of the educational system

To what great extent the reorganisation of education is bound up with our financial economy can be easily judged with the help of a simple illustration. Our immediate problem is to introduce free compulsory basic education for children of the age-group 6–14. The report of the committee of experts on free and compulsory education which has been accepted by the Government of India has stated that universal compulsory basic education could be introduced within a period of sixteen years by two five-year and one six-year plan.

The first five-year plan would aim at bringing such education to a major portion of the children of the country of the age-group 6–11, the second five-year plan would extend compulsion to the remaining children of the same group The six-year plan would then extend the scope of compulsion to the age of 14, so that at the end of sixteen years the programme of eight years' basic education for all children between the ages of 6 and 14 years, as envisaged by the committee, would be completely realised (23)

Now, even this comparatively slow and modest programme, which compares unfavourably with what has already been done in other educationally advanced countries, cannot be implemented unless the general financial resources of the country are improved very considerably. So, Government can launch and implement these plans at an early date only when there are fundamental changes in the economic structure of society and when there is an all-out development of the national resources, through the expansion of industry on the one hand and the improvement of agriculture on the other.

In reorganising our secondary education, though it is necessary to provide for a wide range of abilities and individual differences, we must guard against creating class consciousness and making artificial distinctions between schools doing very much the same kind of work. The secondary school has a double function to perform It must prepare students not only for the general art of living but also for some particular vocation and for citizenship. In the past, generally speaking, these two types of education have been given separately to two different classes. High school education has been available only for a small proportion of the people—that is, the comparatively privileged class This has led to competition and snobbery, friction and frustration, in society. If uniformity of outlook and national solidarity are to be achieved, the only way is to develop a varied but well-integrated system of

secondary education in which vocational and general education will be provided for all without distinction of caste or class. Our secondary education will, in other words, take different forms, but in all its forms it will represent certain common values on which a democratic society must eventually base itself

With regard to the reorganisation of our universities, the Government has recently appointed a weighty commission to suggest improvements and extension suited to the present and future requirements of the country, and it has already started work If India is to make a technological advance in the near future, there is likely to be a great demand on the universities for a more specialised instruction or training in different technical professions, and for greater facilities for technical research work The Scientific Man-power Committee appointed by the Government of India last year made a comparative study of the present output of graduates in engineering and technology, and the immediate requirements of industry alone (leaving aside the requirements of the Government for their contemplated large-scale public works), and came to the conclusion that they must plan for at least a four-fold increase in the output of all categories of personnel, if the needs of the next four or five years are to be met (25)

The universities cannot ignore these needs, but at the same time it will be wrong to restrict the scope and liberalism of their development and policy for the sake of technical training. They must be allowed to make an all-sided approach to learning and research as against a narrow and excessive specialisation. A university can discharge its functions properly only when it maintains a broad range of studies and does not become a specialised institution restricted to the needs of one profession or one field of research. The universities of India have, therefore, to strike a balance between the new claims of sectional interests and the old tradition of a general or liberal education.

To sum up, the crux of the problem in India lies in the inadequate exploitation of its natural and human resources, on the one hand, and an unsatisfactory adjustment of the workers to the work that they are actually doing Perhaps this applies in some measure to all countries, but it applies more emphatically to this country. Its economic system is lop-sided, inasmuch as the agricultural aspect is over-stressed at the expense of the industrial, and what makes the position worse is the fact that even the full agricultural possibilities are not being realised because of the defective and unprogressive methods employed A sound system of education will not only give a more technical and industrial bias to schooling but also will relate school work more intelligently to agriculture, so as to raise standards of agricultural efficiency and attack the problem of insufficient employment and leisure-time occupation. The question is not merely one of change of occupation but of

opening new avenues of work and thereby increasing national wealth On the other hand, there must be a better adaptation of the work to the worker, a proper assessment of individual talents, capacities, and inclination with reference to the types of work that are available. This is by no means an easy or small problem, and has not been fully solved in any part of the world But considerable headway has been made in other countries, and it is necessary to make a well-thought-out beginning here also In some places, in a somewhat unco-ordinated manner, a beginning *has* been made to study the problem, but proper occupational distribution postulates a more systematic approach both from the educational and from the vocational angle.

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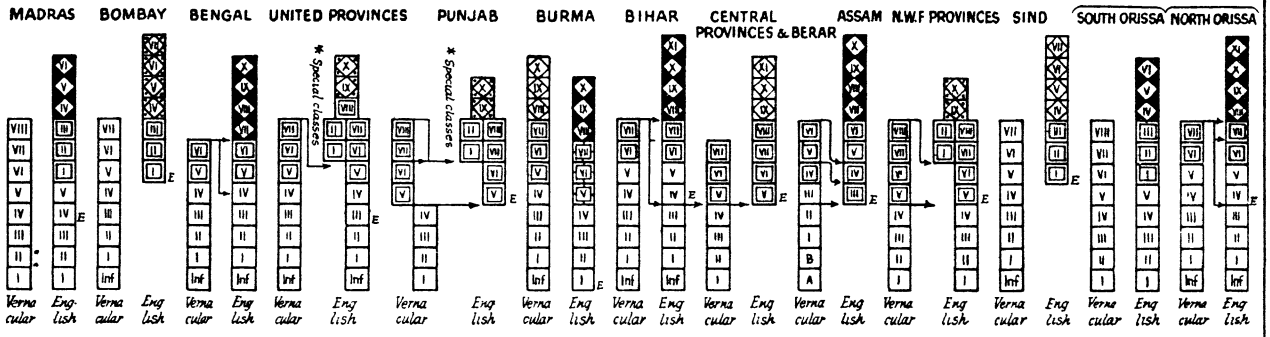
SCHEME OF SCHOOL CLASSES



Primary Stage

Middle Stage

Vernacular as medium of instruction

English as medium of instruction in some subjects

High Stage

Vernacular as medium of instruction

English as medium of instruction in some subjects

English as medium of instruction

English Teaching begins — E

Passage to English Schools →

SECTION IV

CONTINENTAL EUROPE

Introduction

THE European countries represented in this section include the Western European democracies which were numbered among the Allied Nations during the war, two People's democracies of Central Europe, the countries which were neutral, and two ex-enemy countries. In spite of various backgrounds and of the difference in post-war conditions, the social structure of these countries and the problems of educational reconstruction are similar in all of them They have considerable agricultural populations, a numerous middle class, and strongly developed liberal and clerical professions Up to the last war the classical secondary school was the main avenue to higher education and the students almost exclusively belonged to the middle classes and professions Agricultural and industrial workers, with insignificant exceptions, were excluded from the universities by expensive secondary education and traditional classical curricula Thus the selection of administrative and academically trained élite was based on social origin and financial position of parents rather than on individual abilities of pupils or on the social-economic needs of the country. All contributors stress this point, and the statistical tables on the social origin of university students make it quite clear This heritage of the past, however, is recognised everywhere as inadequate for the solution of the problems now being faced

The principle of equality of educational opportunity is officially accepted in all European countries and they all have embarked on policies of modernisation and reform The traditional dichotomy of 'liberal' and 'technical' education with resulting differentiation of social prestige is abandoned everywhere, but the rate of progress is different. The most radical changes have taken place in Czechoslovakia and Poland, to which the eastern part of Germany should be added. Here the influence of the Soviet educational system is paramount, and it has resulted in a rapid development of technical education and a democratisation of higher education through the establishment of special facilities for peasants and workers The same tendencies are noticed in the western part of Europe However, whereas in the eastern part the duality of public secular and independent denominational schools has been superseded by a State

monopoly in education, in the west the dual system is still preserved, accentuating the economic differentiation and presenting a serious difficulty for the introduction of the 'ecole unique'. Nevertheless, the first and most difficult steps of inaugurating reforms have been taken, and Europe is adapting its school systems to the modern needs of industrialised and democratic societies

EDITORS.

CHAPTER ONE

FRANCE

Introduction

In the land of Pascal, we frequently hear quoted these words of that philosopher whose social views were sometimes so shrewd "The most important thing in life is the choice of an occupation It is left to chance" There are those who, in the name of rationalism, on which they wish to base individual selection, choice of studies and vocation, condemn a system which is as unintelligent as it is unjust. Others, in the name of family and individual liberty, support freedom of choice, believing that the social origin of the child, the virtues and traditions of the environment into which he is born, provide a better basis for selection than the uncertainties of a forecast which is always difficult or the presumed wisdom of a collective power acting in the name of the common interest, which would in fact enslave the individual by this school and vocational guidance more surely than by all the constraints of the law or policy.

On the one side are the supporters of the common good, of social well-being, of planning, who demand that to each shall be given the position in which he can best serve and be useful to society On the other are the defenders of individual and family rights, those who wish to keep the right to give their children the curriculum that seems best to them and to have a free choice of occupation, believing that the law of supply and demand, i.e the larger or smaller number of positions and applicants, is bound to achieve the necessary balance I am aware that, on plea of educational democracy and individual rights, many people resent any guidance or controlled selection. On the other hand there is a fear that the recognition of individual tendencies and personal vocation may involve disregard of social requirements and the continuation, in the educational field, of a liberalism which often implies errors and injustice, and even the wastage of wrongly trained and badly used abilities.

What is the position in France with regard to this matter, of vital importance both for the future destiny of the individual and for the satisfactory progress of society? In the land of Pascal and Descartes, what does current usage amount to, and what are its sociological implications? These are questions that must be asked.

Our first observation must be that Pascal's chance is not that of

the mathematicians, but rather that of birth, of environment, of the customs, traditions, and social prejudices by which we are affected as a result of our birth. For Pascal goes on to say "Custom makes masons, soldiers, roofers. People will say 'That man is an excellent roofer', and in speaking of soldiers· 'They are quite mad' Others will say 'There is nothing great except war all other men are rascals.' We make our choice as a result of hearing in our childhood some trades admired and all others despised, for it is our nature to love virtue and hate foolishness We are inspired by these words, it is only in our practice that we err. The influence of customs is so strong that whole populations become masons, others soldiers, and yet nature is surely not so uniform It is custom that is responsible, and that carries away nature Sometimes, however, nature triumphs and keeps man to his instinct, despite all custom, good or bad"

In Pascal's view, then, not only chance, but also custom, the influence of the environment, must be taken into account, and he opposes them to nature, to instinct, to what man is, to what the child is, by birth These are the factors which most frequently determine selection, inclinations, choice of social functions Nowadays, under the compulsion of historical evolution, by which the mobility of individuals and classes has gradually replaced the idea of social predestination, there is a tendency to add to them what has been called school and vocational guidance, and selection, i e. consideration of individual capacities, aptitudes, and tastes. But selection and guidance must also operate so as to fulfil social requirements, the need to draw from the widest possible field our intellectual élite, so as to satisfy the economic demands of a given country and world The individual must ultimately be integrated in the economic and social organism, whose evolution and transformations, so much more rapid than of old, must be forecast. This inevitably leads to a contradiction, an opposition in the underlying principles operating in the choice of a trade or profession, as in the choice of a type of education

The existence of this transitional and contradictory situation seems to be the first observation to be made in considering the French system Alongside powerful relics of the old social influences of family origin or group prejudices, we find attempts, which on the whole are comparatively recent, to organise a selection and a school and vocational guidance of a more rational and equitable type, based on scientific knowledge of the child obtained through pedagogical and psychological observation. But the concepts underlying these efforts are vague and empirical The common good, the well-being of society, respect for the individual, the right of every child to share in all culture, to have the best vocational training of which he is capable, all these are invoked in turn. What does this hierarchy of cultures and vocations amount

to? For many people, a classical education is the only real culture, whatever the child's aptitudes This prejudice is of long standing, and derives from the fact that the best pupils have always been given a classical training, while those of lesser ability received what was considered an inferior training We should surely beware of wishful thinking in this matter Let us remember that the fact that the slaves of antiquity were treated as mere human brutes justified slavery even in the eyes of a Plato or an Aristotle. Many people to-day still hold the view that technical and vocational training is inferior as a result of this old classical bias, and the same is true of the trades and professions In the pages that follow, we shall examine this twofold sociological aspect of the cultural and vocational factors and of their underlying values

A First Selection

The first argument to be brought against the opponents of conscious, intelligent selection is that selection and guidance exist, and always have existed. They are facts, not utopian ideas or a threat to liberty It is therefore useless to plead the difficulty of guidance or selection based on pedagogical or psychological observation of the child, or to argue that it would involve a restriction on liberty. In the existing state of affairs the liberty of many families and individuals is in fact restricted, and it must not be forgotten that the selection and guidance which have been in operation everywhere, for all time, have been of a much less humane type. For hundreds and thousands of years, the right to culture and freedom of choice of occupation have been limited for the great majority by the circumstances into which they were born. Only a privileged class, at first very small but gradually increasing, could hope for advanced cultural training For the rest, culture and occupation depended on social origin. Whether it was a case of a trade handed down from father to son, or of being prevented from acquiring any real culture for want of adequate financial resources, a kind of caste system prevailed, from which it was very rare, if not impossible, to escape

What is the position to-day in France? It is true that primary education was extended under the Republic and made compulsory and free for all. It must, however, be observed that, from the very beginning, a distinction, whose only justification is based on social origin, is made between those who will definitely receive only primary education and those who can hope for a longer course of study We have in France two types of school which in fact correspond to different classes. There is the school of the people, the primary school with a leaving age of 14, and the secondary school giving a longer course beginning at 11, if not at 6, and going on to a much later stage. A certain standard of life and considerable financial resources are necessary for families whose children are to

follow longer courses of study In poor homes, the most that can be hoped for is that children shall take the school-leaving certificate at 15 and go on to a training college to become primary school teachers Secondary education may be free, there may be scholarships—which are too few in number and inadequate in amount—but many families of modest means cannot embark on an undertaking in which the *baccalaureat* is not an end in itself since it offers no immediate openings, and must be followed by preparation for other competitive examinations Thus an infinitely higher proportion of the sons of peasants and workers than of other social classes are obliged to be satisfied with the short, primary education. Their parents must launch them very early into active life, apprentice them as soon as they reach the age of 14, so that they may contribute as soon as possible to their own support and to that of their families.

Here, then, we have a first selection, based on criteria entirely unrelated to the child's own value Moreover, a distinction must be made between the resources available to the town child and those to the country child In the towns there are more opportunities on the spot, such as the *cours complémentaires* (continuation of primary education up to 15 or 16), trade, technical, and secondary schools. The child can remain longer at school because he is living at home For the country child, on the other hand, there are boarding fees or travelling expenses to be considered in addition to the fact that his continuance at school after the age of 14 represents a loss of wages. It is not easy to compel families in the rural districts to keep their children at school even to the end of the compulsory period. Although the primary leaving certificate is taken at the age of 14, some families tend to withdraw their children from school when there is urgent work to be done Many families, then—four out of every five, as we shall see later—can hope to give their children only primary education, or at most the modern, vocational training given in certain *cours complémentaires.*

A more serious matter, and one which adds considerably to the difficulty of selection and guidance in existing social and economic conditions, is that the child's intellectual capacity and general aptitudes largely depend on his environment, on hygienic conditions, on health, on material and moral well-being, on the culture he enjoys in his home It has been proved that a faculty such as memory, which would appear to be independent of environment, is on an average lower by one-third in children of poor families What, then, must be the position with regard to capacities which are much more affected by environment, such as richness of vocabulary, skill in use of language, breadth of interests, all so closely related to the cultural level of the family, its conversation, its reading? These children will be heavily and unjustifiably

handicapped in their school careers until this inequality is brought to an end by giving to every family an equal standard of life and the same cultural conditions.

It can thus be said that the intellectual level of only a section of our young people has really been raised by primary education. On the whole it has succeeded in the case of middle-class children, sons of civil servants, or members of the lower-middle class. For the remainder the problem has been much more difficult. It is not the education itself which is at fault, since its success depends on forces other than those of professional educationists

The extent to which scholastic success and selection are dependent on the economic situation is shown by the striking correlation between school attendance and purchasing power. By drawing the curve of the average standard of life of the nation, calculating the connection between the minimum wage standard and the cost of living, and comparing it with that of school attendance, we find a remarkable correlation. It is true that the school population depends in the first place on the birth-rate, and the fact that the number of pupils between the ages of 6 and 14 in public and private schools, which in 1906 was 6,192,000 in 85,104 schools (one school to every 72 pupils), dropped during the two world wars and rose later with an increase in the birth-rate, was due to general conditions But while in 1937, for example, 4,679,000 out of 5,690,000 children between 6 and 14 were at school (78 per cent.), there was between 1939 and 1945 a period of stagnation parallel with the drop in purchasing power, followed by a rise bringing the proportion in 1946 up to 79 5 per cent There is an exact correspondence between the fall in numbers and the periods of decrease in purchasing power, just as at a later stage an increasing number of parents were obliged to remove their children from secondary school to apprentice them or take them into their own businesses at the time when the middle classes felt the pinch of the economic crisis.

Having said this, we must pay tribute to the efforts made under the Third and Fourth Republics to give the people wider opportunities for culture. In centres of any size, for instance, the number of *cours complémentaires* (catering for children from 11 to 15) was increased, rising from 1,500 with 33,700 pupils in 1901, to 6,780 with 172,000 pupils in 1939, and 9,500 with 223,000 pupils in 1946.

Moreover, there has been an almost complete disappearance of the primary classes in the *lycées* and *collèges* which used to take, from 6 to 11, the children of the bourgeois class destined for secondary education These classes had teachers with additional qualifications to those of the ordinary primary schools. They were suppressed in principle in 1945, and where they continue to exist, have the same teachers as the primary schools. They still have,

however, in the eyes of those who patronise them, a certain prestige by virtue of their training and social value When they cease to exist, it not infrequently happens that parents prefer to send their children to private schools

For there is still another distinction in French education. Alongside the State schools there exists a considerable amount of private education, given either in secular schools, or denominational schools which are mainly Catholic. In 1948, 915,000 pupils were being educated in these primary schools, as against 4,109,000 in the State schools These schools, which either charge fees or are subsidised by grants or donations from various bodies, can often afford only a badly paid teaching staff and are encountering increasing difficulties with regard to buildings and equipment. But they appeal to a clientele with certain religious convictions and of a certain social status, although they also attempt to draw their pupils from as wide a field as possible The proportion of pupils in these schools varies considerably in different parts of the country. In the west, particularly in Brittany and Vendée, it is as high as 30 to 60 per cent. of the school population, while in the north and east it is only 10 to 20 per cent

We are therefore forced to recognise that from birth onwards, as a result of social position and economic conditions, there is a first differentiation between the great mass of children, about 80 per cent, who are destined only for primary education, and the remainder who can enjoy a longer training The *école unique*, from 6 to 18, proposed in the Langevin plan for reform, giving in various forms the same opportunities to all children and the necessary financial position to their families, is far from being realised. But we must go further, and see that, without a profound change in the standard of life of the mass of the people, selection and guidance can only emphasise differentiations quite unrelated to individual value and general interest.

Guidance and Selection at the Secondary Level

It is at about the age of 11 that parents have to decide whether their children are to go on to secondary education (*lycées*, classical and modern *collèges*, and a little later technical colleges) Until last year, each school had its own entrance examination, very difficult in Paris in the modern *collèges*, easy elsewhere, by means of which the required numbers were recruited. But a large section of the child population remained untouched. This was the case for all those with inadequate financial resources, unless they had been picked out by their primary teachers as being certain to win a scholarship and encouraged to go on to secondary education. Suffice it to say that, over the whole period of seven years of secondary education, only 47,000 scholarships were awarded, and that these, even at their maximum value, were by no means suffi-

cient for the maintenance of those who received them, for the inadequacy of the measure to be obvious One out of every ten pupils embarking on secondary education, one out of every hundred children between the ages of 11 and 18 receive some small assistance to continue their studies

Since last year the entrance examination has been made general, but apart from the fact that a large section of children are unaffected by it, the luck of the examination papers, which are not followed up by tests, the fact that the selection is made too early and is of too literary a character, all these mean that it fails to fulfil its purpose either individually or socially To realise this, it is enough to compare the statistics showing the social background of the children in the first year of secondary education and the percentage of the large economic groups It will be found that while there were only 810,000 officials of the civil and administrative services and 750,000 in the liberal professions, as against 7,500,000 industrial and transport workers and 7,400,000 farmers, the civil servants provide 25 per cent. of the secondary school population, the liberal professions 19 per cent, the workers 13 per cent, and the farmers only 9 per cent

An examination of the geographical distribution of pupils receiving secondary education also gives us an indication of the extent to which economic conditions weigh in the balance of selection In the country as a whole, there are 10 secondary school pupils to every thousand inhabitants. But while the average is between 5 and 9 per thousand in the districts north of the Loire (except Seine), it falls to 3 or 4 in the west (Morbihan, Mayenne, Vendée) and rises to 10 or 15 in the east and south-west, reaching a maximum of 15 or 16 in the Hautes et Basses Alpes, Alpes Maritimes, and Hérault It is therefore once again the big agricultural and industrial districts which provide the smallest contingent, whereas in the sparsely populated areas, such as the alpine regions, parents are driven to find for their children openings which the poverty of the district does not provide, and therefore to give them further education.

The question of guidance in the choice between the various types of school or culture available at this level (classical, modern, and technical) was, before the creation of the "New Classes", which constitute a kind of guidance, entirely dependent on prejudice, preconceived ideas, or chance. Apart from advice given by the teacher, it amounted to a choice dictated by the family or by circumstances The fact that a classical education is held in high esteem means that fathers of bourgeois families, professional men, civil servants, heads of business concerns, who have themselves had a classical training, insist on one for their children The lower-middle classes, clerks, artisans, small farmers, prefer their children to take up modern studies. Thus we find that in 1947, in the

first years of the secondary schools, there were 6,470 children of civil servants following a classical course and 5,420 doing modern studies, the corresponding figures in the case of children belonging to the professional classes being 2,858 as against 1,238, and in the case of workers 1,549 as against 5,590 Information collected in the course of two investigations we ourselves made as to the reasons for choice of this or that type of study revealed that they ranged from advice given by the schoolmaster to imitation of one's neighbour, and 67 per cent of the parents on one occasion and 73 per cent on the other left a more reasonable choice to us

In the main, the prejudice in favour of Latin, so strong in the bourgeois classes, and contempt for technical education are responsible for the only selection (there being no question of guidance) which operates in our secondary schools It consists in diverting those unfitted for Latin to training which is considered inferior, first modern, then technical education This selection has succeeded in producing a certain type of intellectual élite with a literary bias It has prevented other types of training corresponding to other aptitudes of the child from being perfected This privileged recruitment has condemned modern, scientific, technical, artistic, and manual trainings to remain inferior or non-existent It has hitherto barred the way to a true, cultural democracy providing types of training adapted to the capacities and needs of all

On the whole, private secondary education merely accentuates the tendencies of State education, since it involves fees whereas State education is free, and makes an even wider appeal to the well-to-do classes In 1948 there were 319,000 pupils in private secondary schools as against 427,000 in State schools Numbers fell slightly after 1945, up to which time they were on the increase Eighty-six per cent of these schools are denominational, the rest secular Although, generally speaking, they follow the lines of State education, they reflect even more closely the ideas of the classes on which they draw and the prejudice in favour of a classical education is even stronger Thus in the Pas-de-Calais, 50 per cent of the pupils, as against 25 per cent in State schools, choose Latin In Charente Maritime the proportions are respectively 60 and 25 per cent. In some cases the pupils are those who have failed to gain entrance to State schools or to get their remove, but there are also schools with a high standard of education

The practical result of this selection and guidance is that the distribution of children receiving secondary education is quite inadequate to meet the needs either of the nation or of the child We find, for example, that against 700,000 in secondary schools, barely 115,000 are in technical schools, a distribution clearly out of line with the requirements of the modern world, and which must have serious consequences, as we shall see.

The fact remains that, in accordance with historical evolution,

there has been a steady increase in the number of pupils receiving secondary education, and that the extended schooling envisaged in all the plans for reform has been partially realised In the State schools, numbers have increased from 140,000 in 1900 to 250,000 in 1920, 387,000 in 1939 and 417,000 in 1947, and in the private schools from 96,000 in 1900 to 319,000 in 1947. But it is easy to calculate how many children are prevented *a priori* from benefiting, through the fact of their social origin, and how much wastage of individual and social forces is thereby involved In spite of the efforts so far made, secondary education remains an aristocratic education, one which has not even the merit or the excuse of an aristocracy equitably recruited

The First Selection and Vocational Guidance

The choice of a career has to be made at about 14 or 15 by those children who, for reasons which are often independent of their own will, have remained in primary education, and by some of those taking the longer course who, for lack of resources or aptitudes, must at once take up a trade. What does it mean for all these children?

It is true that the 1938 Act obliges children leaving school at 14 to take up a vocational guidance examination intended to help them in the choice of a career [1] One hundred and twenty-seven departmental centres of vocational guidance have been set up for this purpose, and they endeavour to the best of their ability to fulfil this function. They first receive a school record filled in by the child's last teachers, which provides information as to his scholastic achievement and general conduct They contact the parents, consider the wishes, tastes, and aptitudes of the child, and give him some psycho-technical tests Should the child obviously show himself to be unsuitable for this or that occupation, this is pointed out and suggestions for suitable employment are made There is no doubt that such advice is valuable. It prevents many mistakes from being made, and may suggest openings which have not occurred either to the parents or to the child, and it is just to recognise the great services which have been rendered by this organisation.

But this guidance is either entirely individual in its inspiration or else it merely enslaves the child to the labour market It either solves individual problems without always considering the broad canvas of needs and possibilities, or it does so pragmatically in so far as it is aware of the evolution of society. The result is that during these post-war years of reconstruction, instead of the several hundreds of thousands of builder's apprentices needed, only 1,000 have been trained. Then suddenly, in response to a circular from the Ministry of Labour, 300,000 masons have to be produced to

[1] No fees have to be paid by the family for this examination.

supply an urgent need. From 1932 to 1937 there was a slump in the engineering, textile, and building industries, and those wishing to take up these trades were directed elsewhere But from 1937 to 1939, in preparation for war, workers in the metal trades were needed, so an intensified recruitment took place and the period of training was shortened In 1940 came Vichy, and guidance obeyed the call of "Back to the land" made at the instigation of the occupying Power But guidance is useless if facilities for training are not available To-day there is no provision in the State schools for technical training in radio-telegraphy, and the heavy fees charged in the private institutions where it is available prevent many from taking up this work.

Thus neither the real abilities of the individual nor the true needs of the community are properly taken into consideration. On the one hand, vocational guidance concentrates on satisfying the desires of the individual, and on the other there is a blind, impulsive response to the demands made as a result of economic or political fluctuations In the latter case, the individual is the slave of the vicissitudes of the labour market, without the real needs of society being satisfied A large number of children are not affected by this vocational guidance, since 47 per cent. go straight into agriculture, industry, or commerce. Only 3 per cent pass into the intermediate agricultural schools and barely 11 per cent can be absorbed into the training centres which are a continuation of primary education The three-years course in these centres can cater for only 110,000 pupils, although it is calculated that there is a need in three years for 800,000 trained agricultural workers and 900,000 industrial workers.

In addition to this unsatisfactory state of affairs, there are the local effects of the bad distribution of schools of vocational training to be considered Two examples will suffice In the Pas-de-Calais, an agricultural and industrial district of 1,168,000 inhabitants, out of 15,000 children of 14 years of age, 875 in the State schools are in the classical section, 1,628 in the modern section, 1,054 in the technical section, 2,858 in training centres, and only 79 in agricultural schools. The corresponding figures for the 1,093 private school pupils are 65, 70, 136, 96, and 39 In Charente Maritime, which is an agricultural district, out of 4,900 children leaving the State schools, 250 chose the classical side, 752 modern studies, 288 technical training, and only 22 agricultural training; 341 were in training centres The irrationality of this distribution can in many cases be explained by lack of the right type of school, by social prejudices, and by ignorance of the real possibilities.

Selection and Guidance in Higher Education

The *baccalaureat* is awarded at the end of the secondary school course, but does not in itself constitute a qualification for a career.

Successful candidates, who in increasing numbers go on to higher education or to special institutes (7,000 in 1910, 80,000 to-day), are obliged to make their own decision as to the branch of study in which they shall specialise Once again it is chance, social determinism, the vague ideas of the students themselves, or of their parents as to their capacities, which are the deciding factors in this actual orientation which has little likelihood of operating to advantage.

The effects of the first selection and guidance at the beginning of the secondary school period are still present, and more obviously so, since the cost of higher studies, the few and inadequate scholarships offered (about 5,000, with a maximum value of 4,500 francs a month, although at present at least 20,000 students need assistance), set the seal to financial selection About 30 per cent. of the men students and 20 per cent of the women, more particularly those taking law and arts, are obliged to practise their professions while completing their studies.

Thus the social origin of the students in the French universities is responsible for the same differentiation as we saw at the secondary stage, but in an aggravated form In 1947–8, 19,760 students out of a total of 113,575 came from the professional classes, 19,052 had parents who were heads of commercial or industrial concerns, 8,149 parents who were landowners or had independent means, 31,904 civil servants, and only 5,520 artisans, 1,503 factory workers, and 916 agricultural workers. This unequal distribution, which is an inverse ratio to the distribution of trades and professions in the country, speaks for itself

The geographical distribution is determined by somewhat complicated factors In certain districts of the south and south-east, Hérault, Gard, Lozière, Vaucluse, Basses et Hautes Alpes, Isère, Savoie, there is one student to every five hundred inhabitants. But in Gironde, Charente, Haute Vienne, Hautes et Basses Pyrénées, Seine Inférieure, Côte d'Or, Doubs, Meurthe et Moselle, and the Paris district, the proportion is the same The first of these are poor, sparsely populated regions seeking openings for their children, while the last are rich and thickly populated, where the proximity of a university accounts for the fact that more advantage is taken of the opportunities offered. On the other hand, in agricultural districts such as Somme, Aisne, Ardennes, Aveyron, and Lot, there is only one student to every one thousand or two thousand inhabitants.

An examination of numbers shows that in the universities of Grenoble and Aix the student body has increased fivefold since 1900, in Paris and Lille it has tripled, in Rennes, Toulouse, Caen, Lyon, and Bordeaux it has doubled, in Dijon there has been only a 50 per cent. increase. Broadly speaking, in the old provincial capitals, old boroughs which have not developed into industrial

cities, numbers have remained stationary It should also be observed that after the First World War there has been an influx of foreign students, who just before the second war represented about a fifth of the total number [1]

So much for selection But how does the question of guidance affect the different branches of higher study? It is true that the achievement of the students, and their awareness of their own limitations, lead them to avoid certain branches which are difficult or in which openings are restricted But family traditions, unjustified prejudices, and uncertainty like that which drives those who are undecided to take up law, for example, often account for the choice made Twenty-two per cent of the students choose arts, 18 per cent science, 10 per cent medicine, 7 per cent pharmacy, and 33 per cent law, although careers at the Bar or in ministerial office, to which law studies might lead, either require considerable initial capital or are overcrowded Moreover, posts in the magistrature are limited, and private legal practice, banking, and industry require a practical training not included in the university course for the licentiate of law

In addition to the students in the universities, there are some 12,000 in the *Grandes Écoles* or in the attached special institutes The high standing of these schools of higher study generally results in very careful selection of candidates The fact that scholarships are awarded to those who need them to prepare for the competitive examination, and that the courses are free to the successful candidate, makes for a certain justice in the selection But up to a short time ago, candidates for the diplomatic service, for instance, had to fulfil certain requirements in the matter of social status. An attempt was made to remedy this state of affairs, by the creation of the *École Nationale d'Administration*, which to-day also trains the upper ranks of French Government service But here again the same influences are at work as in the other branches of higher education At the last examination, 42 per cent of the candidates had parents in the civil service, 20 per cent in commerce or industry, 8 per cent in the liberal professions, 6 per cent. in banking or insurance, 2 per cent. artisans or tradesmen, 4 per cent. agriculturists, and 5 per cent with independent means There is a definite progress in the right direction, but we are still a long way from a truly democratic recruitment.

Moreover, the shortage of schools of higher studies such as the schools of agriculture or the colonial schools, which produce only a few hundred specialists, shows how little the system is adapted to meet the needs both of France and of the French Union.

The very conception of the *Grandes Écoles*, which are theoretical rather than practical, and their system of recruitment, which makes

[1] At present foreign students amount to about 3 5 per cent —EDITORS

a final discrimination between individuals before their entry into active life, whereas it is in the exercise of the profession that discrimination should be of more importance, prevent the selection from being fully effective The fact of having been a student of the *École Polytechnique* or the *École Navale* gives one a cachet of superiority, but it may be that some of those who enter the professions by a humbler door may be better practicians. It is true that in certain professions adult schools have come into being, e g. those of the French railways and postal services, in which employees, throughout their careers, can improve their knowledge, prepare for examinations, and, if they are capable of it, reach the highest rungs of the ladder. Such schools are, however, too few, and as yet too undeveloped.

There is little to be said about the place of women in higher education as in the other branches, except that in principle they have acquired an equal footing with men and that their examination results are equally good It may be that they are still feeling the effects of certain prejudices, such as that of their assumed inferiority in science They outnumber the men in arts, represent only a quarter of the law students, and their total number is only half that of the men students

The existence of independent higher education alongside State education makes little difference to the general picture Like secondary education, it is generally modelled on the State system It had 24,831 students in 1947. The students take the State examinations, and generally follow the university courses, merely completing them in their own institutions, except for theology, which can be studied only outside the State system. Private higher education merely accentuates the traditional tendencies we have already observed

Generally speaking, it can be said that the student body, which in the past came essentially from the bourgeois classes, is to-day drawn from the ranks of the civil service and to some extent from the professional classes Recruitment is still far from democratic, and from meeting the general needs of modern society. Twenty-five per cent of the male population ought to-day to be receiving specialised training for posts of responsibility in agriculture, commerce, and industry, and 80 per cent of the pupils at the secondary level ought to be being trained for industrial, commercial, or scientific careers Not more than 20 per cent. should be receiving a specifically literary training The existing distribution is quite different Training for posts in agriculture is almost non-existent, and the percentage of technical training is far below requirements On the other hand, hordes of civil servants, draftsmen for Government offices, and bachelors of law are being turned out at a rate which far exceeds requirements But even those who leave the university with a degree must, with the exception of future

teachers, who are deemed capable of teaching after a practice period of three weeks, undergo a further practical training, learn accountancy, for instance, or follow a course lasting several years in the branch they have chosen Is it not an anachronism that there is no training in economics in our secondary schools, and that students of economics are obliged, as a result of the mediaeval distribution of the faculties, to take the same course in private law as those who will enter the magistrature? A complete overhaul of the system of distribution of studies and organisation of secondary education has therefore been the aim of plans for reform such as that of the Langevin-Wallon Commission, and numerous attempts are being made to put into practice the underlying principles of these plans.

Reforms and Changes in Process of Realisation

This severe analysis of the French system of selection and guidance must be tempered by an account of the initiatives of various kinds that have been taken to solve a problem which is the result of historical evolution and which is of supreme importance for the future of the individual and for the organisation of society.

A humane selection and orientation, which takes into consideration both individual capacities and social needs, must (1) give the individual the best education and the fullest opportunities of vocational training available, and (2) harmonise as far as possible individual capacities with social requirements. A liberty which leads individuals to a blind alley, which makes them "*déclassés*" (outcastes), or which gives them qualifications they cannot use, is no liberty It is a false adaptation of individual capacities to social needs which does not use to the full the abilities of all, and which does not enable every man to be most fully himself and to serve society to the utmost of which he is capable A proper understanding of individual and collective needs shows them to be one and the same.

A beginning has therefore been made, in accordance with the views expressed by the Commission of Reform, towards achieving the conditions necessary for continuous, progressive guidance from the age of 11 to 18 To this end, the curriculum of the primary and secondary classes from 11 to 15 has been standardised, except for those leaving school at 14 A General First School Certificate is awarded at the end of the *cours complémentaires* as well as in the *lycées* and *collèges*. This uniformity must facilitate transfers from one type of study to another and avoid the damage and mistakes of too early differentiation.

But the most important achievement in school guidance has been the creation in 1945 of eight hundred new classes from the first to the fourth year. In these classes, in which at present both pupils and teachers are voluntary, there is a common core com-

prising all the basic subjects indispensable for all pupils, and optional subjects which constitute as it were "testing benches" at which the pupils' aptitudes are gradually tried out In the first two years, from 11 to 13, the musical and plastic aspects of manual and artistic abilities are tested, as is also the ability for classical studies of those children who show a desire for them. At the beginning of the third year, in accordance with the indications provided by close pedagogical and psychological observation, pupils are given the option of a science, a second modern language, Greek, engineering, or economics The last of these optional subjects have only recently been included in the curriculum and must lead to a *baccalaureat,* which was awarded for the first time in engineering two years ago, and will be awarded in economics this year At the end of the first cycle, at the age of 15, parents and teachers will be in a position to know the branch of study best suited to the child It is the responsibility of the teachers to advise the parents, who remain free to make their own choice. When there is disagreement, the measure of the child's success is the deciding factor This four-years course must also lead to a first selection between those pupils who will have to be ready to go on immediately to vocational training, and those who can continue their studies up to and beyond the *baccalaureat*

An attempt is thus being made to solve the problem of ensuring to each child the type of education best suited to him But the normal sequel to school guidance is vocational guidance, and therefore at this second stage it must be possible to provide students or apprentices with information and exact statistics as to both present and future needs in the various fields of economic and social activity. The importance of statistics and of anticipation of future requirements, whether regional, national, or in the world at large, since to-day all economies are closely interrelated, is far from being fully appreciated in a country where liberalism has been the order of the day Efforts are being made, thanks to such bodies as the *Bureau Universitaire de Statistique et Documentation Scolaires et Professionelles,* under the aegis of the Ministry of Education, to furnish the necessary up-to-date information and to advise as to the opportunities available in the manual and technical trades on the one hand, and in the professions on the other. Pupils leaving school can thus discover which professions and trades offer plenty of scope, and can be diverted from those which are overcrowded Vocational guidance centres and regional centres which are in touch with the *Bureau de Statistique* fulfil local requirements in this matter. In each secondary school there is a master who acts as liaison officer with the centre, provides parents with the necessary information, and arranges lectures on careers in collaboration with competent representatives of the chief regional or national branches of activity. He issues pamplets giving information as to various

careers and provides documentary material This organisation is far from perfect, but it is clearly indicative of a will to put an end to haphazard selection in a field so vital to the future of the child and to the satisfactory progress of society

There is no doubt as to the problem, with its antinomies and dangers absolute liberty or direction of labour, *laissez-faire* or rational organisation, the sacred rights of the individual or social needs The task with which France is confronted is that of seeking a human solution, and we believe that it can be found The fact that exceptional abilities are rare, that aptitudes are ambivalent in the great mass of people, and that for the majority of human beings, so long as they are not cramped by a narrow education, there is a wide range of possibilities, makes possible the reconciliation of the individual with the social In any case, it is the most serious problem with which modern society and civilisation are faced in all countries

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CHAPTER TWO

THE NETHERLANDS

Introduction

THE problem of the interdependence of education and society is a very real one in the Netherlands at present As the social consequences of the Second World War have shown us, Western Europe finds itself in a socio-economic crisis, which can be overcome only by very drastic changes in the structure of economic life. This implies also, as we shall see later on, a change in occupational distribution The question arises whether education in the coming years is to facilitate, or on the contrary rather to hamper, this necessary change Economic life is not, however, the only factor that determines the relation between education and society. In this article, therefore, other aspects will be discussed as well

In order to gain a proper perspective we will take our starting-point in the nineteenth century, this will at the same time prove profitable in analysing the form which the Netherlands' problems take at present.

Historical Development

From a sociological standpoint the main part of the nineteenth century can be characterised as the age of the " bourgeoisie " The revision of the Constitutional Law in 1848, strongly influenced by the ideas of rationalism, made the well-to-do middle class the " governing class " The bourgeois, as a result of the rapid growth of mercantile capitalism in the seventeenth century, had grown quite rich But this acquired wealth led in the eighteenth century to a slackening in all sectors of economic life. Society entered a static phase, which continued in many ways during the nineteenth century. People were thrifty in their habits and austere in their mode of life

Even without allowing for any income that might be derived from inherited property it was possible to make a reasonably profitable living out of one's business by a very moderate expenditure of effort. Much spare time was spent on hobbies. The introduction of new technical methods, which totally revolutionised economic life in England by the end of the eighteenth century, did not make much progress in the Netherlands. Consequently, an economic retardation could be observed in comparison with neigh-

bouring countries An attitude of complacency limited contact with foreign countries to a minimum.

Education reflects its society's way of life, and, naturally enough, in a static, economically undifferentiated community of this kind, education had similar characteristics Its structure was quite simple Apart from elementary education, which served to provide the tools of learning, there were the grammar schools, which had developed out of the mediaeval Latin schools. They were intended to be a first step towards a university education and were designed in particular to be the training-ground for some learned profession in society (by Royal decree of 1815). Latin and Greek were the main subjects, and to a lesser extent mathematics, geography and history In the second part of the century this type of school was divided from the fourth form upwards into two departments department (*a*) laid special stress on classical languages, and matriculation from this department was a qualification for university study in the faculties of theology, literature and law Department (*b*) paid special attention to the scientific subjects (as well as to classical culture), so that this department provided a preparation for university study of mathematics, physics and medicine

Nevertheless, the need was felt in the first part of the nineteenth century for an education more directly connected with practical life. However, schools of this type were neglected up to 1863, when the Secondary Instruction Act came into being The ingenious minister Thorbecke, in his explanatory memorandum, defined the meaning of the secondary school as follows

> If elementary education is called education for the people in the sense that it is meant as a first-step towards universal education, and the university is considered to mean education for the small number who seek training for an occupation or career in which academic knowledge is required, then the area in between, secondary education, means the training of that considerable part of the population which, having acquired elementary education, strives for general knowledge, culture and preparation for the various branches of economic life! By "economic life" we mean not only agriculture, industries or trade, but in the widest sense of the word "knowledge of the modern world and of current economic and technical practice" In the judgement of the designer, "the main role of State-controlled secondary education must be to give a general preparation for a wide variety of social functions, occupations or services Not to give training for a particular industry, not to turn the schools into workshops, nor to teach detailed skills, but to develop the mind in the way necessary for practical life"

As appears from this quotation, this is a "social school" in the real sense of the word Its establishment is the more remarkable, in that it happened just on the eve of the transition in the Netherlands from early to modern capitalism About 1870 there was a large-scale extension of the network of railways, the change-over from sailing ships to steamers was accomplished, and large-scale

industries began to develop. New colonial policies and the rapid development of German industry brought commercial traffic to a prosperous condition

The modern secondary schools, together with the commercial day-schools, which developed rapidly after 1870, offered a good educational foundation for boys who, between the ages of 16 and 18, were looking for employment immediately after completing their school course Knowledge of modern languages (English, French, German), physics, commercial practice and book-keeping came in very useful.

The new school was meant for a numerous middle class Little attention was paid to the education of working-class children Certainly it had been stated in the Elementary Education Act of 1806 that education was to be organised so that, through training in useful and suitable skills, the intellectual abilities of the children would be developed, and they would be trained in all the social and Christian virtues But, as attendance at elementary schools was not made compulsory until 1900, not all children received sufficient elementary education

Nor was any attention paid to vocational training The trade was learnt well enough in the small workshops where it was carried on. When, after 1870, large factories were built, and the demand for well-trained factory hands greatly increased, the need for good technical training became more acute The Government, following out its *laissez-faire* policy, and influenced also by pressure from leading industrialists, refrained as much as possible from direct action, and left things mostly to private initiative The development of technical education had, therefore, no legal status After many unsuccessful attempts, the Technical Education Act finally came into being in 1919, and covered elementary as well as secondary technical education

The same lack of interest on the part of the Government can be noticed in connection with agricultural and horticultural education. Only when, around 1878, a severe agrarian depression (mainly caused by cheap grain imports from America, Russia and the Argentine) had shown the agricultural backwardness of the Netherlands, did the Government instruct a State Commission to draft an Act on agricultural education.

The changes in the structure of society increased the complexity of its requirements. The elementary schools no longer provided an adequate preparation for many occupations, especially for the lower administrative functions in the civil service and in industry. In about 1900 a new type of school, the advanced elementary school, was introduced to meet this need.

University education developed at a slower pace. It would be unfair to blame the nineteenth century for a lack of interest in the relation between university and society. To quote Huizinga: "On

the contrary, it (the university) worked with great zeal to serve society, even if this was not always done with a proper insight or by efficient means" But economic values did not gain wide recognition until the end of the nineteenth century. The "Polytechnical School" in Delft was raised to university status only in 1905. After 1910 two higher commercial schools were founded, and one of the secondary schools for agriculture and horticulture was transformed into a higher institution. After the World War of 1914–18, the number of faculties at the older universities was increased During recent decades more attention has been paid to the social sciences

This picture of historical development, which does not claim to be complete, shows that the differentiation in education appeared only when social life grew more complex Because the economic life of the Netherlands was characterised by commercial activities (although during the last twenty-five years of the nineteenth century industry was developing also), the special care of the Government for general and commercial education is easily explained. The lateness and meagreness of its concern for technical and agricultural education is also understandable from this point of view.

In the above we have emphasised the socio-economic side of education But we must not fail to mention cultural aspects as well Because of the widespread knowledge of foreign languages, the Netherlands was able to exercise an intellectual open-door policy. Huizinga wrote in this connection in 1934

> The windows of our house are all open, sea and land breezes may blow freely through it Century-old contacts have made us acquainted with the French, English and German spirit If the Netherlands has the right to feel superior to other countries in any way, it is because no other nation has been able so thoroughly to assimilate three different cultures and understand so well the mentality of them all as has the Netherlands [1]

In time the number of schools increased. This was largely due to the increased demand for education on the part of the rural population During the nineteenth century the eastern and southern part of our country, in particular, was inhabited by a homogeneous agrarian population. In this static society, where occupational life was dominated by tradition, the school played an insignificant part Only with the establishment of industries and the improvement of communications did the need for more education come to be felt more strongly. In addition to the agricultural and horticultural schools, which often met a natural demand, especially after 1915, schools for advanced general education were set up For the family of the average large farmer these were of great importance, because they offered the farmer's children the opportunity to prepare them-

[1] J Huizinga, *Nederlands Geestesmerk* (Amsterdam, 1934)

selves for an occupation different from that of their parents This became the more necessary since, despite cultivation and reclamation, the land available was insufficient to enable the younger generation to make an adequate living in agriculture (Naturally, as communications developed, some of the young people from country areas went to the neighbouring towns to obtain further education)

TABLE I

TOTAL NET EXPENDITURE BY STATE, PROVINCES AND COMMUNITIES

Per Pupil (Student) in Guilders

Year	*Elementary and Advanced Elementary Schools*		*Secondary Education*	*University Education*	*Technical Education and Training in Domestic Science*
1	2		3	4	5
1870	6		228	337	58
1880	10		234	1,120	47
1890	14		210	563	50
1900	18		164	624	45
1905	20		159	513	47
1910	28		188	875	59
1915	33		171	698	71
1920	100		400	1,416	138
1925	101		414	944	141
1930	104		510	1,047	146
	Elementary Schools	Advanced Elementary Schools			
1935	90	166	355	784	126
1940	83	147	298	614	121
1946	134	183	347	914	158

The growing intervention of the Government in the field of education led to an increase in the money spent for this purpose Table I gives a survey of the net Government expenditure per pupil (or student) in guilders Although the real purchasing power of the guilder during this period has not been calculated, it shows all the same the way in which much more money was invested by the Government in the education of successive generations The large increase in expenditure between 1915 and 1920 was caused on one hand by the high cost of living after the First World War, and on the other by the more intense interest taken by the Government in education The decrease after 1930 is due to economies resulting from the general depression

TABLE II

NUMBER OF PUPILS (STUDENTS) ACCORDING TO BRANCH OF EDUCATION

Year	Elementary Schools[1]	Secondary Education	University Education	Technical Education and Training in Domestic Science	Agricultural and Horticultural Education	Total
1	2	3	4	5	6	7
A Absolute Numbers						
1870	474,448	4,312	1,339	3,841	36	483,976
1880	544,615	6,932	1,404	8,765	89	561,805
1890	652,030	9,409	2,579	10,810	384	675,212
1900	754,993	13,423	2,816	20,672	3,423	795,327
1905	857,135	15,199	4,392	30,186	6,431	913,343
1910	916,594	18,899	4,863	40,097	15,214	995,667
1915	994,376	24,175	5,069	51,258	13,943	1,088,821
1920	1,040 114	35,044	8,552	75,134	25,554	1,184,398
1925	1,076,832	44,991	9,438	111,413	25,558	1,268,232
1930	1,182,528	45,190	12,061	125,063	30,992	1,395,834
1935	1,141,976	55,527	12,628	131,542	29,882	1,371,555
1940	1,143,378	63,900	14,825	155,112	44,753	1,421 968
1945	1,195,628	77,674	21,791	154,621	42,967	1,492,681
1946	1,201,328	84,135	24,694	185,873	46,854	1,542,884
1947	1,166,360	86,490	25,955	197,378	50,380	1,526,563
1948	1,164,762	84,962	26,379	217,976		
B Per 10,000 of Population						
1870	1,325 4	12 0	3 7	10 7	0 1	1,352 0
1880	1,357 2	17 3	3 5	21 8	0 2	1,400 0
1890	1,445 3	20 9	5 7	24 0	0 9	1,496 7
1900	1,479 2	26 3	5 5	40 5	6 7	1,558 2
1905	1,555 7	27 6	8 0	54 8	11 7	1,657 7
1910	1,564 6	32 3	8 3	68 4	26 0	1,699 6
1915	1,568 5	38 1	8 0	80 9	22 0	1,717 5
1920	1,515 0	51 0	12 5	109 4	37 2	1,725 2
1925	1,472 1	61 5	12 9	152 3	34 9	1,733 7
1930	1,490 2	56 9	15 2	157 6	39 1	1,759 0
1935	1,360 8	66 2	15 0	156 7	35 6	1,634 3
1940	1,294 3	72 3	16 8	175 6	50 7	1,609 7
1945	1,296 7	84 2	23 6	167 7	46 6	1,618 9
1946	1,291 4	90 4	26 5	199 8	50 4	1,658 6
1947	1,222 3	90 6	27 2	206 8	52 8	1,599 7
1948	1,198 8	87 4	27 2	224 3		

[1] 1870–1925, *elementary and advanced elementary schools.*

The increase in the number of pupils has been mentioned already Table II gives a survey of all schools from 1870 The numbers of pupils in the various branches of education are given in actual figures and also in proportion to each ten thousand of the population In all branches of advanced education growth was very rapid One has only to look at the figures for technical education The relative decrease in elementary education is a result of changes in the age-distribution of the population This enormous increase in the number of pupils was possible—in so far as it was not the result of the rapid growth of the population—only because social groups originally receiving only elementary education now entered the various branches of advanced general education The growing interest of the country population has been pointed out already It should also be mentioned that the industrialisation which made its appearance round about 1870 was combined with movement from the country to the town While, in 1869, 25 per cent of the population lived in municipalities of more than fifty thousand inhabitants, this percentage had increased to 33 5 in 1899 and 37 0 in 1930 This factor must have had a certain influence, especially in view of the fact that the migrating population had received hardly any advanced education in its original location.

But recruitment to education from fresh population groups took place in an even wider sense Although statistical data for the period are not available, it is clear from Thorbecke's words that secondary education was intended for the children of the well-to-do middle class The democratization of society, manifest in the emancipation of the working class, found its counterpart also in education The lower classes sent their children (their boys, especially) to schools for advanced education in ever-increasing numbers This is illustrated in the fact that out of the pupils entering secondary schools in 1946, 29 per cent were children of high officials in the civil service and private enterprise, or of members of the liberal professions (clergymen, doctors, lawyers, secondary school teachers), in short from the higher social levels, 49 per cent. came from the "old" and "new" middle class (tradesmen, shopkeepers, technicians, medium-grade administrative personnel, owner-farmers, teachers in elementary schools, etc.) and 21 per cent were drawn from the group of lower technical and administrative personnel and the working class (For boys and girls separately, these figures were 25 per cent., 50 per cent, 24 per cent, and 35 per cent, 47 per cent 17 per cent respectively) Also in the universities similar tendencies can be observed, if in a lesser degree For students registered in 1947 the figures were those from the upper social classes 44 per cent, middle 47 per cent., lower classes 7 per cent. (For men and women separately, 41 per cent, 49 per cent, 8 per cent. and 59 per cent, 35 per cent, 3 per cent) These figures

show that girl pupils and women students are relatively drawn more from the upper classes

The composition of the undergraduate population can be analysed in other ways In 1947, 77 per cent. of the students came from families in which the father had not had a university education (for men and women students respectively, 79 per cent. and 64 per cent) All this means that increasing numbers of young people have the opportunity, after completing their studies, of occupying positions of higher social status than that of their fathers Moreover, during the last thirty years, the regulations governing school fees were radically changed, so that the amount paid now depends on the income of the father, young people of small means, if making good progress in their studies, are provided with textbooks free of charge The Government also grants scholarships, as do various private institutions In 1947, 10 per cent of the students (for the three classes mentioned above, 5 per cent, 12 per cent, 28 per cent) respectively were receiving financial help from the Government If we include help from private institutions as well, the figures for the three social groups amount to 14 per cent, 25 per cent, and 54 per cent ; and for the body of students as a whole to 22 0 per cent In fact, a radical change has taken place during the last hundred years in the social structure of the population of schools and universities

Nevertheless, the complete democratization of our advanced education has not yet taken place On the contrary, if we compare the number of students from the various classes with that of the total population in the same age-groups, then it is clear that the child from a well-to-do family has a fourteen-times better chance of a university course than one from the lower social groups Moreover, most of the scholarships have to be repaid after the course of study is completed, which results usually in long years of hardship for the recipient

Taking into consideration the present cost of living, scholarships are very inadequate Sixty per cent of the Government scholarships vary in amount between fl 400 to fl 1,600, whereas a sum of fl 2,000 to fl 2,500 a year is necessary Many students therefore live in precarious conditions. In 1947, 22 per cent. of the students did not enjoy a daily hot meal, among those whose homes were distant from the university, and who were obliged to live in lodgings, this figure even amounted to 33 per cent Many students (10 per cent) are compelled to undertake all kinds of jobs in addition to their studies in order to provide a living for themselves The above data are taken from an investigation, made by the Central Bureau of Statistics, which included all students (25,000) The same is true of secondary education Children from the lower social classes are at a disadvantage compared with their schoolmates from the upper groups Of those entering a secondary school in

1946, after two years 15 per cent, 19 per cent. and 21 per cent. from the higher, middle and lower classes respectively had left this type of school, because they had not made the progress required This greater proportion of withdrawals among the lower-class pupils cannot be attributed to their having a lower level of intelligence, since there was little variation between the different social groups in the proportion of pupils whose progress was regarded as satisfactory. It results, in fact, from the greater financial difficulties experienced by the parents of these pupils. The educational problems of the "middle class" must also be mentioned Since the war the income level of this group has not kept pace with the rise in the cost of living, while at the same time the burden of taxation has weighed upon them increasingly heavily Dr P. J Idenburg called attention to this some time ago in his *The Rise and Fall of the Intellectual Aristocracy* He said

> Recent figures show that while the real income of the working class has increased since 1938–9, that of the salaried category has declined The Municipal Bureau of Statistics in Amsterdam made a comparison between the real net incomes (i e after deduction of income tax) of a number of intellectual workers in December 1948 and ten years ago It was shown that the purchasing power of the lowest-grade municipal employees had declined to 80 per cent of the pre-war amount, that of lecturers, members of the legal profession, and some groups of higher-grade municipal officials to 60–70 per cent, and that of professors and municipal doctors to 55 per cent It should be noticed that the higher the professional status the greater is the discrepancy between present-day real net income and that earned before the war Investigations made in industry into the living conditions of employees confirm the results of the municipal investigation, and show an even greater decline for the higher grades

Since the devaluation of the guilder is leading to a still further increase in the cost of living, this may have the educational consequence that many parents, especially the professional group, will no longer be in a position to give their children university education From the social and economic point of view this would have very dangerous consequences, especially as the Western European countries can strengthen their economic position only by expanding scientific research (for which kind of work university graduates are needed), and by bringing new and consequently saleable products on the market. It is possible that there would arise a shortage of physicians, lawyers, secondary school teachers, etc

One final word about the influence on education of the "women's rights movement". Since 1930 (figures for earlier years are not available), a third of the population of secondary schools has consisted of girls. At the university stage the process of women's emancipation can be traced over a longer period. While in 1900 the student community included 5 per cent women, this percentage has now risen to 15. The most marked development, however, has

been in housewifery and technical schools In addition to the improvement in the quality of the education provided by these schools, quite a number of new training possibilities have come into existence which offer to every woman the chance to make an independent living, so that quantitatively also we can speak of an enormous growth Whereas in 1870, 5 per cent. of the pupils at technical schools were girls, to-day 46 per cent. of the total number consists of girls We can summarise the position by saying that though great progress has been made, the aim of democratization has not been completely realised in education any more than it has in society as a whole (where, with the universal franchise, it has been realised from a political point of view only) We have not yet reached the position where everybody has (in accordance with his abilities) an equal chance of securing continued education

The Present Structure of Education

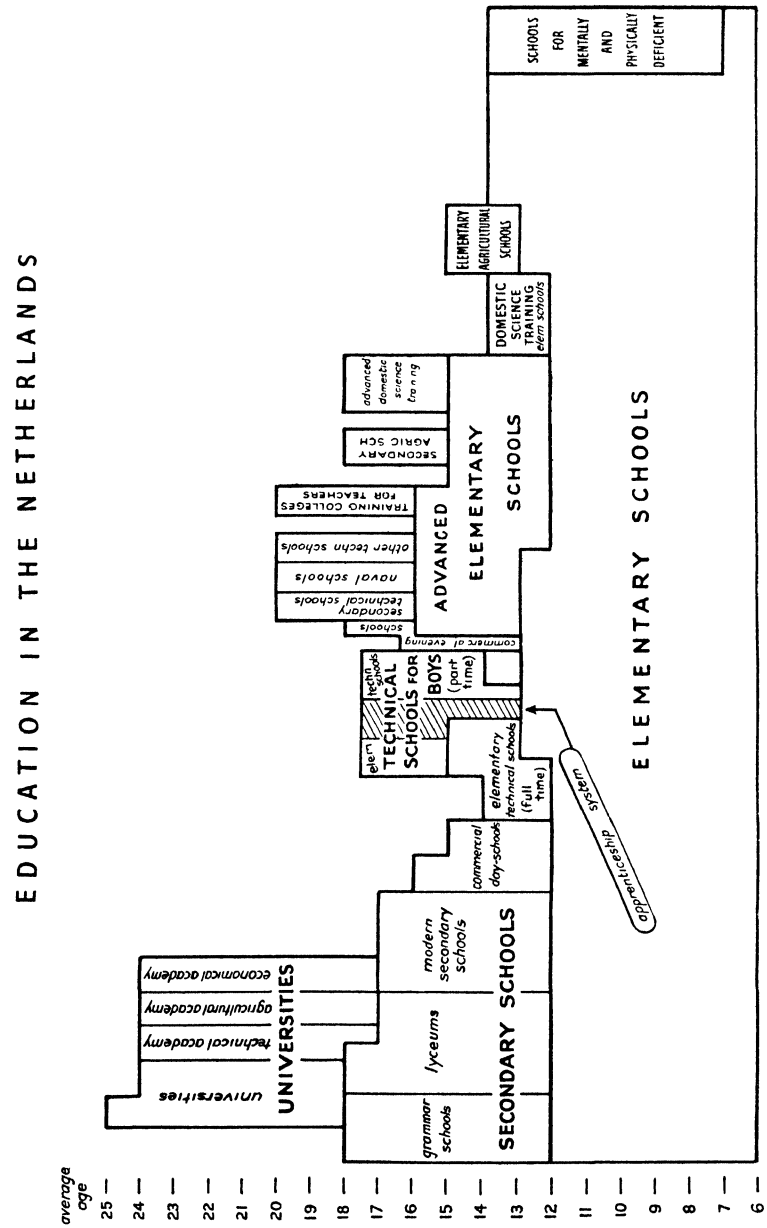
In order to avoid a repeated interruption of the discussion concerning new types of school we give in the following graph a general survey of the present structure of Netherlands education Each of the outlined white squares stands for a type of school placed in the schedule in such a way as to show the preliminary training required for it, and also the possibilities for advanced study offered by it The ages given relate to pupils who, right from the start of their elementary education, have gone through all stages without any delay The picture is somewhat schematised in order to make it easier to read (for instance, the age of admission for elementary education is actually 6 or 7 years and not, as suggested in the graph, 6 years) Also many variants of part-time education have been combined

We will describe briefly those types of school which are relevant to our purpose

(1) *Advanced Elementary Education* The curriculum for a three- or four-year course consists of the principles of mathematics and physics, the elements of modern languages (English, French, German), and commercial subjects, in addition to continued study of the elementary school subjects (arithmetic, the Dutch language, geography, history) Although in the final year's course opportunity is given for specialisation in mathematics and physics, this type of school can be characterised as a training for lower-grade office-work. By way of the mathematics and physics section (which is small in size), one can be admitted to secondary technical education. It is also possible to pass from these schools into teacher-training colleges

(2) *Secondary Education* Admission is only by examination. This branch of education consists of

(*a*) *The Grammar School,* which we discussed in an earlier paragraph. The curriculum, arranged for a six-years' course, has altered


EDUCATION IN THE NETHERLANDS
average age
25
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
universities
technical academy
agricultural academy
economical academy
UNIVERSITIES
grammar schools
lyceums
modern secondary schools
commercial day-schools
elementary technical schools (full time)
SECONDARY SCHOOLS
apprenticeship system
ELEMENTARY SCHOOLS
elem tech schools
TECHNICAL SCHOOLS FOR BOYS (part time)
commerc al evening schools
secondary technical schools
navol schools
other techn schools
TRAINING COLLEGES FOR TEACHERS
ADVANCED ELEMENTARY SCHOOLS
SECONDARY AGRIC SCH
advanced domestic science training
DOMESTIC SCIENCE TRAINING elem schools
ELEMENTARY AGRICULTURAL SCHOOLS
SCHOOLS FOR MENTALLY AND PHYSICALLY DEFICIENT

little during the last hundred years The certificate of the (*a*) department qualified its holders for a university course of study in the humanities; that of the (*b*) department, in the sciences

(*b*) *The Modern Secondary School* (*Hogere Burgerschool*) this school has changed its character more than the grammar school. As its certificate has also, since 1917, carried with it the right to take university examinations, it has acquired a dual character. It has become an institution on the one hand training for direct social practice, and on the other hand giving training for further university study After the third year the pupils can choose between the more mathematical and physical side and the department devoted to modern languages and commercial subjects In each department the course lasts for two more years The certificate in mathematics and physics (the so-called certificate H B S /B) carries with it the same right to take university examinations as that of the grammar school (*b*) department That of the other department (the certificate H B S /A) serves as a qualification for taking university examinations in economics and the social sciences only

(*c*) *The Lyceum* is a combination of both above-mentioned types of school The programme of the first two years is equivalent to that of the modern secondary school After that the training programme is divided into a grammar department (which provides a four-years' course for the same certificate as the grammar school itself) and a modern secondary school department, which prepares on a three-yearly syllabus for the same two examinations as the modern secondary school The new feature of this type of school is that the decision to follow a classical or a modern course is put off for either one or two years.

(*d*) *The Commercial Day Schools* train, as their name suggests, for the intermediate grades of administration and commerce The certificates do not give a right to take academic examinations

(*e*) *Secondary Schools for Girls* the programme of these schools is adapted to feminine interests and character. The certificate that can be obtained after five years of study does not entitle its holders to take examinations at the universities

(3) *Lower-grade Technical Education.*

(*A*) *for Boys*

(*a*) *The Junior Polytechnic Day Schools* train boys for lower-grade technical occupations in the crafts and in large-scale industry. The training usually lasts two years and includes many subjects carpentry, metal-work, typography, instrument-making, house-painting, tailoring, bread and cake baking, etc. Besides lessons of a theoretical character, education of a practical nature is given. A large proportion of time is devoted to the practical side of the chosen branch of study. Some of these schools are connected with the large industries, for which simple manufactured products are made in the course of the practical work.

(*b*) *The Apprenticeship System* under this rapidly increasing form of lower-grade technical training the pupils are placed straight away in a factory, where careful attention is paid to ensure that they receive training in their craft according to a fixed programme, under the direction of a foreman They receive supplementary education in arithmetic, drawing, the Dutch language, etc , during the factory hours or in the evening

(*c*) *The Industrial Night Schools* provide an opportunity for those who enter employment directly after leaving the elementary school to supplement their day-time experience with more theoretical knowledge. The duration of the training varies, according to the branch selected, from two to five years

(*B*) *for Girls*

The lower-grade housewifery and technical schools provide a two-years course of education in household skills (sewing, cooking, child-care, etc , as well as continued study of the elementary school subjects arithmetic, the Dutch language, etc)

(4) *Lower-grade Agricultural and Horticultural Training* prepares the future farmer or market-gardener for his work The instruction occupies one or two days a week and lasts for four years

(5) *The Commercial Evening Schools* the same remarks apply here as to the industrial night schools

(6) *The Secondary Technical Schools* provide training for foremen and other middle-grade technicians. After a school course of two years, the pupils have a practical year and the fourth year is spent in the school again These schools include various branches mechanics, electrotechnics, architecture, etc

(7) *The Secondary Nautical Schools* give future mates and engineers their training

(8) *Other Secondary Technical Training Schools*, e g the schools for arts and crafts, social work, etc None of the schools mentioned under (6), (7) and (8) confers a certificate which carries with it the right to take university examinations

(9) *The Secondary Agricultural and Horticultural Schools* are often attended by the sons of big farmers, who receive there a thorough specified training. The certificate awarded is a qualification for university study in veterinary science and agriculture

(10) *Advanced Elementary and Secondary Domestic Education for Girls* these branches of education give a training for certificates in typical female subjects, while at the same time providing training for secondary school teachers of these subjects These educational establishments do not open the door to university study.

(11) *University Education* the Netherlands have six universities, including many faculties, furthermore, they have one specifically technical university, one specifically agricultural university, and two universities devoted to social and economic studies.

Educational Methods

After the various types of schools and the pupils we must consider the method of Netherlands education In view of the dominant formative role occupied by general education (since all children receive six to seven years of elementary education, while large numbers continue their education at the advanced elementary and secondary schools), we will focus our attention especially on this kind of education Without much exaggeration we may state that the picture drawn by Mannheim at the beginning of his essay, "Education, Sociology and the Problem of Social Awareness", can also be applied to the Netherlands situation Often, indeed, a contrast exists between education and society, and education is "society-blind" Atomism and individualism resulting from rationalism and liberalism have up to the present left their impression on the methods used Although in the pedagogical magazines the nineteenth-century psychology—which saw the mind as the sum of a number of separate qualities, which can be formed one by one—is generally rejected, this theory still underlies much actual practice in the schools The view that the human personality is one and indivisible and that education should adapt itself to this fact has not gained wide acceptance and understanding. In both elementary and secondary education certain subjects are thought of as providing a "mental discipline", while others are held to train the memory. Thus arithmetic, mathematics and Latin are intended to train the power of reasoning, as a result of which the material used is not drawn from the concrete reality of daily life, but is largely determined by the logical structure of the science concerned. The mathematical instruction given, for instance, to children of 12 years of age has the same structure and sequence as Euclidian geometry itself The problems of physics and chemistry are hardly ever taken from practical life and technics In most textbooks the practical application of the natural sciences is not taken as a starting-point, but is mentioned in small print only at the end of abstract explanations of principles These subjects are taught on the assumption that training in them will automatically be transferred to thinking in other fields. The subjects which are supposed to train the memory are taught in such a way as to cram into the pupil as much information as possible. Little attention is paid to linking up the teaching with the problems of contemporary life. The result is an abundance of information without any social sense. Mannheim's saying "the aim of the school is not only to impart ready-made knowledge, but to enable us to learn more efficiently from life itself",[1] is still little understood.

Moreover, the subjects are taught in complete isolation from each

[1] K Mannheim *Diagnosis of Our Time*, 4th ed , p 55

other, thus developing in the pupils an atomistic way of thinking (this is true of university students also) They are not taught to see the connection between the various aspects of one object Either integration of the various aspects is not considered as important, or one presumes that it will take place of its own accord. It is obvious that this attitude may adversely affect professional competence to a dangerous extent. The increased significance of social relations (e.g the emancipation of the labour community) and the ever-increasing interdependence of the various sectors of cultural life, which marks the late capitalist phase of Western culture, mean that narrowly conceived professional knowledge is insufficient Signs of "interdependent thinking" (Mannheim) are extremely rare in secondary education as well as at university level

The relation between teacher and pupil follows similar lines The teacher explains and the pupil absorbs Only if the pupil has failed to understand what is being taught to him may he ask for the explanation to be repeated It hardly ever gets as far as a "discussion" between master and pupils Too often the latter are considered as passive objects to be cultivated Therefore the pupils' own initiative plays a very minor part In elementary education very little importance is attached to manual instruction In the teaching of chemistry, only in the uppermost forms of the secondary schools are some hours devoted to practical work. In physics, only at a small number of schools do the pupils, from the lowest forms upwards carry out experiments themselves In brief, independent activity and investigation receive little encouragement This state of affairs produces an atmosphere of unreality which permeates all stages of education, the universities included We will demonstrate this with a few examples. In the Netherlands, fundamental scientific research reaches a high standard, but there is little contact between the universities and industry, so that this fundamental research tends to be somewhat sterile in character. The engineers turned out by the Delft Technical University have, quite rightly, an excellent reputation at home and abroad as research workers, but too little attention is probably given to the technical and manipulative aspects of their training. Another example the professional training of the future secondary school teacher receives very little attention. Because the law does not require anything more, many students are content to follow a lecture now and again in the methods of the subject they are to teach later on, and to gain a superficial knowledge of child psychology

In the study of economics much attention is paid to theoretical methods, but there is hardly an opportunity for empirical economic research It is usually thought that a few months' business spent as an apprentice during the vacation is a sufficient basis for a future career. Finally, when the theological students leave the university, after finishing their studies, they have had no prac-

tical experience or training at all, apart from the few "trial sermons" given to their fellow students

Admittedly the above account is one-sided and paints too sombre a picture Our country has a number of Montessori and Dalton Plan schools which should be excluded from the criticisms mentioned above Nor should I fail to mention the praiseworthy activity of many teachers in elementary as well as in advanced education, who try to give practical effect to newly found pedagogical and psychological insights In vocational education, too, in which practical experience plays a much greater part, things are different in many respects But in a brief outline concerned to bring out broad universal trends the accent must obviously fall on the typically theoretical, atomising character of the Netherlands educational system We cannot speak of any large-scale educational reconstruction Together with an examination of the changes necessary we shall offer some concrete examples of what we mean.

Highly characteristic of the Dutch educational system is the traditional system of class teaching and promotion In this, too, the influence of the nineteenth-century psychology and rationalistic way of thinking is evident

On the widely accepted hypothesis that all children are alike at birth and that differences in knowledge are due to differences of environment, pupils are assembled in groups (classes) and educated in one and the same way All the pupils in the class receive the same teaching, the tempo of which is adapted to that of the average pupil The pupil who is quick-witted and who has shown a perfect command of some particular side is compelled to go through it again There is little opportunity for him to tackle on his own (or helped by a teacher if necessary) a topic outside the official school syllabus It is clear that under this regime there can be no optional subjects. In elementary as well as in advanced general education every pupil has to follow *all* the subjects of the time-table and to qualify himself in them Even a limited specialisation allowing the pupil to concentrate more upon those subjects for which he is gifted or which particularly interest him, and to drop or spend less time upon other subjects, is unknown to Dutch education It would not be fair to blame the teachers for this situation, for however devotedly they do their work, they cannot give individual attention to thirty or forty pupils (in secondary schools about twenty-five) The fault lies with the system

At the end of each school year pupils are promoted to the next form only if they are judged to have reached a satisfactory standard in their work as a whole This standard is estimated by taking an average of their gradings in the different subjects. The pupils who are not judged worthy of promotion have to repeat the past year's course in its entirety, and have to go over the same work once more even in those subjects in which they did well the

first time—a system the drawbacks of which are obvious. Moreover, there are no objective standards by which the pupils' fitness for promotion is judged In actual practice, as appears from the figures of the Netherlands Central Bureau of Statistics, approximately 25 per cent of secondary school pupils fail to achieve promotion each year, and this percentage shows very little variation from year to year. Dr K. Posthumus, in his book, *Levensgeheel en School,* has shown in detail how this arbitrary decision to fail a fixed proportion of pupils each year is operated through the system of marking and grading in such a way that it *appears* to be a law of nature deriving from the application of objective standards As a result of such a system, there is fierce competition among pupils to avoid being among the 25 per cent who fail. All their energies are concentrated exclusively upon their school marks, and they are left with no opportunity or incentive to master the essentials of what is taught them or to see it in its wider connections And, even though this is not the conscious intention, there is fostered in actual fact a competitive spirit (like that of a contest for " the survival of the fittest ") which is profoundly inimical to education for co-operation and team-work

The consequences of the system are even clearer when we consider the certificate which is the ultimate objective of this competitive struggle In the Netherlands a secondary school certificate has great " commercial value " We have travelled a long way from the nineteenth century, and left behind not only its early static phase when there was no call for specialised knowledge, but also its later dynamic period when the school was valued as a source of knowledge The *sine qua non* for success in modern capitalistic society is the possession of a certificate. In regard to the secondary school certificate a curious and paradoxical situation exists On the one hand there are widespread complaints that those possessing it seem to have derived but little benefit from their studies (understandably enough, since school and society have so little contact with each other), while on the other hand employers treat it as an essential qualification

We conclude this section with some statistical information on results obtained. On the basis of the figures relating to promotion it can be calculated that 49 per cent of the pupils in elementary education pass through the school years I–VI without being kept down at any stage For the boys the percentage is 46 per cent, for the girls it is considerably higher, namely 53 per cent In the country the situation is a little better than in the towns. Whether or not they are kept down at any stage, 86 per cent of elementary school children reach the sixth grade before leaving school, for the boys and the girls the percentages are 84 and 87 respectively. For the advanced elementary education the following figures have been calculated· 42 per cent. of the pupils admitted in a given year

gain a certificate after three or four years. The results of secondary education are not much better For many years past, the Central Bureau of Statistics has followed up the progress of every secondary school pupil by means of an individual record card This accurate statistical observation shows the following 22 per cent. of those admitted in any given year (for boys and girls respectively 21 per cent and 23 per cent) finish the course and gain their certificate in the prescribed time, 15 per cent do so after one year extra, 6 per cent after two years, and 2 per cent after three years Finally 45 per cent of the pupils admitted never obtain a certificate For boys and girls the percentages are 47 per cent and 41 per cent. respectively. We need add no comment on this dismal fact the poor results tell their own tale.

The Economic Problem of the Netherlands

Does Netherlands education meet the demands made upon it by the economic and social problem of our epoch? Very briefly, the situation of the Dutch people is as follows

The population of the Netherlands has increased threefold during the past hundred years, and at present amounts to some ten millions Incidentally this expansion of the population, which is still continuing, has been the result of a surplus of births over deaths, and cannot be checked by restrictions upon immigration, which has had only a negligible influence In these difficult post-war years, the increased population creates quite new problems It is calculated that during the next twelve years employment will have to be found for an additional two hundred thousand persons at least In the following table the Netherlands situation is compared with that of neighbouring Western European countries by means of the vocational generation-index (that is, the estimated number of young people entering the labour market during a given period for every hundred of the older generation leaving it).

TABLE III

VOCATIONAL GENERATION-INDEX FOR MEN IN LABOUR MARKET[1]

Countries	1950–1955
England and Wales	110
Scotland	143
Germany	145
Belgium	103
France	118
The Netherlands	160

[1] *Taken from W Steigenga, "Population Increase and Labour Supply"* (The Economist, *January* 1949)

A further analysis by age-groups shows that between the years 1950 and 1960 the 14–18 age-group in the Netherlands will increase by 23 per cent. How is the labour market to absorb this additional

manpower? Transport, banking, insurance and the distributive trades cannot be expected to employ appreciably larger numbers than they do at present; increased mechanisation is likely to decrease rather than increase the agricultural population, while the administrative apparatus will probably be reduced for the sake of economy Only two possibilities remain emigration on a large scale, or rapid industrialisation The former solution can scarcely be made effective within so short a space of time as a single decade Hence the Dutch Government bases its economic policy on industrialisation. If this policy succeeds (and success is an essential condition for national survival) it will bring about radical changes in the country's economic structure Some figures taken from the 1947 census make this clear.

TABLE IV

POPULATION ENGAGED IN DIFFERENT SPHERES OF EMPLOYMENT ON MAY 31ST, 1947

	Absolute	*Percentage*
Industry	1,428,120	37
Agriculture and fisheries	770,185	20
Distributive trades, transport, banking and insurance	914,257	24
Social services	404,487	10
Education	91,084	2
Remaining services (including cultivation, domestic services and unknown)	258,344	7
TOTAL	3,866,477	100

In interpreting the statistics it should be noted that under the category "Industry" are included small craft workshops as well as large-scale factories. More detailed information is hard to obtain because of the difficulty of drawing any hard-and-fast line between these two kinds of manufacturing concern. Probably, however, some 18 per cent of the total working population earn their living in large-scale industrial enterprises Comparing this percentage with those for distributive trades, etc. (24 per cent), and agriculture (20 per cent.), we see clearly the important place still occupied in the Netherlands economy by agricultural production and trade This view is confirmed by the fact that despite a relative increase in such typical export industries as the metal and chemical industries, the working population in industry as a whole has diminished by 2 per cent. since 1930.

Economic necessity, however, requires the transformation of the Netherlands from a moderately into a highly developed industrial country, with a vastly expanded output of consumption-goods and production-goods of high quality.

Industrialisation and Education

It is evident that this industrialisation will involve radical changes in education, the more so as our country must rely on her manpower to outweigh her shortage of raw materials. The most urgent need is for a rapid redistribution of emphasis from the general and commercial to the technical aspects of education. This is not only a matter of building more technical schools and training more skilled labourers, secondary technicians and engineers, what is also in question is a fundamental revision of the foundation and structure of general education itself. Abstract and theoretical teaching must make way for independent activity, investigation and choice on the part of the pupils. Educationists will have to work hand in hand with industrialists in adapting the school curricula to the new needs of society. This refers particularly to general education, for the administrative and clerical staff will need technical insight and a certain technical knowledge in order to perform their function in industry effectively. Our present training for this type of work is not satisfactory Various factors make it difficult for the younger generation to adapt their outlook to the new conditions

Mr E. D Koning, one of our captains of industry, recently pointed out in *Economy* (March 1949) the principal difference between an "industrial environment" and the background of farming, handicraft or small shipping He argued that the young farmer or bargee grows up from birth in the atmosphere of his father's occupation. He learns its first principles through play, and he has acquired a wide knowledge of it even before his actual training begins In an industrial environment, however, things are very different the son of a factory worker has no contact with the factory, except through what his father tells him about it, he does not live in it himself, nor does he see much of it first-hand Yet, even with this natural advantage supplied by the environment, it is only the good training given in our agricultural and nautical schools that has enabled our agriculture and shipping to compete successfully Much more attention, therefore, should be paid to training for factory work, other than that of a specifically technical, clerical or administrative kind. Even in the elementary school, education should be developing in the pupils an outlook appropriate to an industrial epoch. Some much-needed reforms in the educational system acquire particular significance when considered from this point of view. Thus there must be increased opportunity for specialisation in order to bring to light and develop technical abilities. At the time of writing, a Parliamentary debate on education is taking place which shows recognition of this need for educational reconstruction. In one of the reports we read.

> Many members endorsed the view that the academic approach reigns supreme. This appears in an over-loading of many curricula with a

mass of information to be learnt by heart, making the pupils' lives a misery to no purpose After leaving school they soon discover that much of their knowledge is completely useless to them in real life Many schools, indeed, are a long way from observing the golden rule *non scholae sed vitae discimus* The vital contact with the needs of society has been for the most part lost, because a cult of examinations has begun to dominate the curricula The consequence is, on the one hand, that ability in a certain direction often does not show to full advantage In this connection the fact was mentioned that secondary education, with its existing requirements in regard to languages, bars the way to a secondary technical school and to the technical university for many boys with great technical ability On the other hand, the labour market is overstocked with young people who, as a result of the prevalent worship of certificates, have taken a wholly or partially academic course which only condemns them to pauperdom The educational system should be organised in such a way that there is an organic connection between the various types of school, and also between the schools and the society for which they wish to train their pupils. At present, this is not at all the case Moreover, industrialisation makes it most desirable that, much more frequently than happens at present, policy should be determined by the needs of society

But a new set of problems claims our attention More social and spiritual problems arise in an industrial society than in an agrarian one Human relations are more temporary, ancient manners and customs disappear rapidly Can the school stand aside in this critical situation? No, it cannot, for its task is not confined to training its pupils in practical skills It must also form their characters so that they will be able to undertake their responsibilities as citizens in both local and national affairs In the past, education for citizenship has been somewhat neglected in Dutch schools. This was due in part to social causes, and in part to religious differences. For the relations between Protestants, Roman Catholics and Humanists often deteriorated into sharp conflicts of ideas and a dogmatic refusal to consider opposed points of view, and a consequent withdrawal into intellectual isolation In the educational field the consequence was that the three major types of school—public, Protestant and the Roman Catholic—have brought up their pupils in their own creeds, without regard to the effect on Dutch society as a whole.

What will the future bring in regard to these problems? It is difficult to forecast future developments, which can take shape only gradually. There is urgent need for co-operation between educationists, sociologists and other experts to work out the necessary changes in the content and methods of education.

Choice after Elementary Education

In connection with the economic problem outlined above it is important to trace what the pupils do after leaving the elementary school.

Seven years of compulsory education, from the age of 6 or 7 to the age of 13 or 14, is at present the rule in the Netherlands,

though from January 1st, 1950, this will be extended to eight years. Backward pupils are sorted out early in their school career by the system of promotion Some go to special schools for the educationally subnormal Even then there remains a group of pupils who are unable to keep pace with the tempo of the teaching and are therefore kept down for one or more years. After seven years' education these children leave the elementary school without having gone through all the forms Including children removed to schools for the educationally subnormal, this number at present amounts to 14 per cent. of those leaving the elementary school every year. In view of their poor intellectual capabilities, it is probable that they will not seek any further education The category of unskilled labourers is drawn from this group.

TABLE V

FURTHER EDUCATION BEYOND THE ELEMENTARY SCHOOL STAGE (PERCENTAGES)

Branch of Further Education	*Boys*	*Girls*	*Total*
Advanced elementary education	23	23	23
Secondary education	10	7	8
Commercial evening classes	2	1	2
Technical education and training in domestic science			
Day schools	26	27	27
Evening classes	14	—	7
Agricultural and horticultural instruction	5	—	3
No further education	20	42	30
TOTAL	100	100	100

Those who get as far as the sixth or seventh form and who desire further education can choose between (*a*) advanced elementary education, (*b*) secondary education, (*c*) commercial night schools, (*d*) technical education and training in domestic science, (*e*) industrial night schools. The foregoing table gives an idea of the type of education chosen. We notice that for 30 per cent of the pupils (for the boys 20 per cent and for the girls 42 per cent) elementary education is the only education they receive (The 14 per cent. mentioned earlier are included in these figures.)

Table VI throws further light on the matter. While among the 13-year-old boys only 5 per cent. are receiving no education, this percentage rises among the 14-year-old boys to over 31 per cent., and for each succeeding age-group it continues to increase. From the economic point of view these numbers are also significant, for the industrialisation of our country, if the goods produced are to be of high quality, needs much skilled labour. Simple technical knowledge is not enough. It is therefore a matter of urgency to

TABLE VI

NUMBER OF PUPILS (STUDENTS) ACCORDING TO SEX, AGE, FULL-TIME AND PART-TIME EDUCATION (1947, PERCENTAGE)

Age in Years	*Education*			*Receiving No Education*
	Full-time	*Part-time*	*Total*	
Boys				
8	99 9	—	99 9	0 1
9	99 7	—	99 7	0 3
10	99 4	—	99 4	0 6
11	99 5	—	99 5	0 5
12	97 5	0 0	97 5	2 5
13	94 4	1 0	95 3	4 7
14	62 7	6 0	68 7	31 3
15	46 8	12 6	59 4	40 6
16	33 4	18 8	52 2	47 8
17	22 6	21 6	44 2	55 8
18	15 6	18 8	34 4	65 6
19	11 6	11 8	23 4	76 6
20	7 5	6 9	14 4	85 6
Girls				
8	99 9	—	99 9	0 1
9	99 7	—	99 7	0 3
10	99 7	—	99 7	0 3
11	99 1	—	99 1	0 9
12	98 1	0 1	98 2	1 8
13	90 8	0 4	91 2	8 8
14	52 1	1 7	53 8	46 2
15	33 5	4 1	37 6	62 4
16	20 9	6 1	27 0	73 0
17	11 6	7 7	19 3	80 7
18	6 5	7 3	13 8	86 2
19	4 0	6 1	10 1	89 9
20	2 0	5 8	7 8	92 2
Total				
8	99 9	—	99 9	0 1
9	99 7	—	99 7	0 3
10	99 6	—	99 6	0 4
11	99·3	—	99 3	0 7
12	97 8	0 1	97 9	2 1
13	92 6	0 7	93 3	6 7
14	57 5	3 9	61 4	38 6
15	40 3	8 4	48 7	51 3
16	27 3	12 6	39 9	60 1
17	17 2	14 8	32 0	67 0
18	11 1	13 1	24 2	75 8
19	7 8	9 0	16 8	83 2
20	4 8	6 4	11 2	88 1

decide whether further education should be made compulsory for boys of 14 and 15 years of age. From Table V it appears, moreover, that about 40 per cent. of the boys choose some form of technical training. As this is also approximately the percentage of male workers at present employed in small and large industry, it would seem that further education is here reflecting the country's recent economic structure rather than preparing for the more intense industrialisation which is aimed at in the future. Thirty-five per cent. of the boys choose further education of a general kind, and this figure, of course, includes those preparing for the universities and the professions as well as those proposing to take up office work, etc. Nevertheless, this type of school is attracting too many boys, for unemployment has reappeared among office workers, while on the other hand there has been since 1946 a permanent shortage of skilled labourers in industry.

The following factors determine the type of further education chosen (1) As a result of the growth of the " new middle classes " there has sprung up a striking preference for white-collar jobs. The more skilled workers, in particular, are inclined to send their children to a school for advanced elementary, or if possible for secondary, education, hoping in this way to improve their social status. Will not unemployment often be the consequence?

(2) Often the advice of the teacher is decisive, especially in the case of children from lower social classes This advice tends to favour advanced elementary and secondary education This is explicable because the teacher himself has very often risen out of the class of manual or agricultural workers by way of the advanced elementary school and the training college for teachers. His advice is thus easily influenced by memories of his own career. A further factor is that the teacher naturally has little contact with socio-economic life From his youth he has been surrounded by school walls, first as a pupil, afterwards as a teacher The social and economic problems of our times do not really move him, even though he reads about them in his newspaper and his professional journal

(3) Religious rivalries also exert an indirect influence. In the nineteenth and in the beginning of the twentieth century our country was the scene of a keen struggle between the advocates and opponents of denominational education. In our own day this conflict is still perceptible in all school politics The three major types of school, the State and municipal, the Protestant and the Roman Catholic, each try to strengthen their own ranks. Because the Protestant and Roman Catholic schools for advanced elementary and secondary education are spread over the country in much greater numbers than those for technical education, religious considerations lead many headmasters to advise their pupils to choose a school for advanced elementary or secondary education.

(4) Finally we must refer to the inadequate provision of vocational information. It is true that the vocational guidance bureaux distribute folders to pupils who are about to leave the elementary school, and that teachers sometimes work in such a bureau as a side-line, but this touches only the fringe of the problem In 1948 only 10 per cent. of those who left school turned to such a bureau for advice.

As a result of these factors it is often the more intelligent pupils who go to advanced elementary and secondary schools, whereas technical education can attract only the less talented. Consequently, somewhat strained relations exist between the teachers in elementary and advanced elementary schools and those in technical education.

The Choice for those who are 16 to 18 Years of Age

What becomes of the pupils of the different kinds of secondary school after they have completed their course? In the case of the technical schools the answer should be straightforward the boy who has gained a certificate from a technical school will try to earn his living in craft or industry. But it is remarkable how many look for jobs other than those for which they have been trained A comprehensive inquiry at Eindhoven showed that 30 per cent of the ex-pupils of the technical school wanted to secure an office job. It is probable that the unemployment which has already occurred among office workers will put an end to this aberration

My remarks are therefore confined to the types of school which provide a general education First, advanced elementary education A great many youngsters (presumably 75 per cent) look upon the advanced elementary school certificate as the final stage of their education (apart from study by correspondence course for a vocational certificate), and most of them choose a post in an office Some of the remaining 25 per cent. go into the lower forms of secondary schools or to a training college to be trained as elementary school teachers. To young people belonging to the lower social strata in particular the teacher's career offers the possibility of a rapid improvement in social status. After gaining the teacher's certificate, he can qualify for appointment to an advanced elementary school by specialised study in the evenings. More advanced study of a particular subject opens the way to becoming a secondary school teacher. The Netherlands Central Bureau of Statistics is carrying out an inquiry into the social origin of the teachers in secondary schools. Although the final results are not yet available, it is already apparent that many have come from the lower social strata (e.g. the father was a postman, factory worker, etc.). After having worked for some years in elementary schools they won for themselves by earnest study a position in a secondary school Finally there are those who specialised in mathematics and physics during their final year at the advanced elementary school, and who thus

gained admission to secondary technical schools. (In passing, it should be noticed that it is also possible to be admitted to the secondary technical school from the elementary technical school via special courses.)

Let us now consider the young people aged 18 to 20 who have gained a secondary school certificate. It is impossible to say exactly what their fate will be. About 65 per cent. go to a university, others go to the secondary technical school; while for the remainder we have no data, as a great many possibilities for further study are open to them which lie outside the observation of the Central Bureau of Statistics (e.g. training to become an army officer, a foreign representative for industrial or commercial firms, a nurse, or an assistant chemist, or for a career in the plastic arts or on the stage). It is not known exactly how many try to get a job at once Considering the general character of the education they have received, many of them will look either for office work or for employment in the distributive trades, insurance or transport.

Let us next consider those who enter a university There is no entrance examination, and the secondary school certificate does not have to be produced until the student takes his or her first examination. The number of those who register without having the necessary certificate is small (6 per cent), as university study offers them no social prospects. We have already analysed the social stratification of the student community However, the question must be put whether the high proportion of students drawn from the wealthier classes really means that the most talented young people are being recruited to the universities There is still extremely little known about the spread of intelligence among the various social strata in our country The Psychological Department of the Royal Army is carrying out inquiries into this matter by giving to every recruit not only a medical but also a psychological test, but the data obtained so far are insufficient to answer the question raised above Since the war there has been much discussion in the student and professional journals of the need for psycho-technical advice for future students. The argumentation in favour of this is as follows it would safeguard the student from the misery of discovering too late that the course is too difficult for him, and cut down fruitless expenditure by his parents or by the State. Up till now only a few incidental investigations have been made. Also from the analysis of examination results we cannot help concluding that in fact not only the talented go to the university. We illustrate this by the examination results of those who first matriculated in the years 1930, 1931 and 1932, to an institution for university education. The Central Bureau of Statistics followed up these youngsters individually by means of record cards, and the following table shows, for certain faculties, the percentage of them who passed their final degree examination.

TABLE VII

UNIVERSITY EXAMINATION SUCCESSES (IN PERCENTAGES)

Faculty	*Men*	*Women*	*Total*
Theology	78	46	75
Law	72	61	69
Medicine	71	54	68
Dental surgery	75	47	70
Mathematics and physics	59	42	54
Literature and philosophy	52	34	43
Veterinary science	—	—	67
Agricultural science	—	—	66
Technical science	—	—	56

The figures for economics have not been included, because before the war many economics students found a suitable post before they had completed a degree course. Since the war similar investigations have again been made. It is too early to draw conclusions about the examination results of the present generation Probably they will be still less favourable as a result of the deficiencies in education during the years of occupation. The question arises whether these relatively poor results are not partly connected with the structure of Netherlands university education. The most characteristic feature of the situation in the Netherlands is the high degree of freedom which the student enjoys. If he wants to follow the lectures of the professors, he is free to do so; if he does not want to follow them, he may neglect them. Of course, this is less true of the faculties in which practical work is necessary (medicine, mathematics, physics, technical study, etc). Nor, as a rule, is there a fixed period at the end of which the student must present himself for his examinations. This very great freedom dates from the time when university education was quantitatively of little importance, and undoubtedly does not help to secure good academic results.

What decides the choice of faculty? In addition to the financial factors already mentioned, and the typically personal reasons, we can point to a number of geographical, social and economic factors

(1) The possibilities offered by the university situated near to the parents' home. The already mentioned investigation of student conditions also tried to find out whether there was a connection between the economic structure of the region where the student grew up and the faculty he had chosen. With one exception, to be mentioned later, the connection appeared to be non-existent. This was very noticeably the case in regard to technical subjects, which can be followed in only one university, namely at Delft (situated in the western part of the country). The surrounding communities (The Hague, Leiden, etc.), towns which certainly cannot be described as industrial centres, appeared to provide most

students, whereas conversely in the centres of large industry (the region round about Eindhoven—Philips' concern, Twenthe—textile industry manufactures, South Limburg—mining area), and where in some sense an "industrial" atmosphere prevails, there seemed to be little interest in technical study. Students from these areas did not choose the distant university at Delft, but they went to a university institution situated nearer to their home. There was a positive connection only in the case of students of veterinary and agricultural science in the chiefly agricultural regions these faculties were preferred and claimed the largest number of students. (We see that this result supports the distinction drawn earlier between an "agricultural" and an "industrial" atmosphere.)

(2) Students often choose a course leading to a highly paid profession; the great interest in medical study must also be explained by this motive, and we can say the same of some technical studies. On the other hand, the theological and literary faculties (the latter of which provide some of the future secondary school teachers) are less popular

(3) The profession of the father often exercises a great influence According to the inquiry made in 1948, it appeared that 58 per cent of the students whose fathers were physicians or dentists chose medical study. Similarly, 26 per cent of those whose fathers were clergymen chose theology, while the law faculty attracted 22 per cent. of those whose fathers were burgomasters, town clerks, etc, and 33 per cent. of those whose fathers performed a juridical function. As for farmers' sons, 10 per cent. chose veterinary study and 22 per cent study at the agricultural university, while out of the sons of those to do with trade 23 per cent. chose economics. In the new generation coming from the families of leading technicians, etc., the interest in technical subjects was above the average

(4) Similarly the cost of study often plays a part Young people from the middle and lower classes choose medical study less frequently than those from the wealthier classes, because of the high cost of study and the heavy expense of setting up in practice after qualifying. And, conversely, it may be that students from the lower classes display a relatively greater interest in theology, because the tuition fees as a rule are lower than for other faculties, and a number of private scholarships are available.

Are the universities supplying the properly trained intellectual *élite* of which our society stands in need? The results of an inquiry recorded in the *Report of the Governmental Commission on the Re-organisation of University Education* [1] give a valuable indication of existing shortages. The Report concludes that, in addition to people equipped to occupy positions of leadership, our country is in urgent need of the following

[1] Government Printing and Publishing Office, The Hague, 1949

(1) People who have had the benefit of a fairly limited intellectual training similar to that provided in English-speaking countries by the three-years course leading to the bachelor's degree. This type of university training is mentioned as a suitable preparation for.

(*a*) Secondary technical functions in industry.

(*b*) Lower posts in journalism, e.g. sub-editing, etc. The training of many present-day journalists has been totally inadequate.

(*c*) Posts on the staffs of training colleges for teachers. At present teacher training is carried out by ex-teachers; and the presence of university-trained staff would certainly help to widen the horizon of these institutions.

(*d*) Staffing the offices of the trade unions.

(*e*) Social work A number of years in university surroundings is most important here.

(2) People whose training for a particular profession is supplemented by a wider understanding of social problems and insight into practical affairs.

(3) People trained in the social sciences A marked demand has arisen for training of this kind as a qualification for personnel managers, works managers, youth leaders, etc, and if this demand proves to be a stable one, new faculties might have to be created in order to meet it.

This brief summary of the Report shows that in regard to university education, also, an estrangement from social life has taken place.

In this article we have tried to give a general picture of the problems of Dutch education in relation to the changes which are taking place in the country's socio-economic structure Our exposition of these problems has therefore been very one-sided—necessarily so, because in the years ahead our very survival as a nation will depend on our vastly increasing our productivity. However, there is a real danger that the attention of our people may be focused too exclusively upon the economic sectors of life, and that cultural issues may be too much neglected.

In this era, in which various world cultures meet, sometimes in grim conflict, the Netherlands must continue to fulfil her historic role of cultural intermediary between the Continent and the Anglo-Saxon world. But she can do so only if the younger generation are brought into contact with the greatest achievements of European culture, and in this, also, education is of fundamental importance.

J. DE BRUIJN.

CHAPTER THREE

BELGIUM

Vocational Education and Guidance

BEFORE turning to the actual discussion of this theme, I should like to emphasise how closely it corresponds with the problems which confront our Ministry of Education at the present time

In Belgium, as elsewhere, education, in becoming more universal, has changed in character and even in aims In centuries past the school was the meeting-place of the chosen few who came to acquire one of the characteristics of superiority Now all citizens, without distinction, must pass within its doors Henceforward, whether they intend to become intellectuals or soldiers, business men or artisans, it is to the school that they will come to learn the secrets which will allow them to enter their chosen occupation and in it find success.

It follows that in the life of the man of to-day the years spent in school seem no longer to be a time ruled by individual taste and free choice, but, on the contrary, increasingly a period of social service. For it is clear that he who is training himself to play his part in society is already serving it.

The idea that going to school is a social service produces several results. The first is this Society, later to benefit from the student, has already certain obligations towards him. It is its duty to provide for him a rational school system of such a sort that he will be able to find in it suitable education at the very lowest cost And it must make it possible for him to have access to all the social resources, no matter where he is born, no matter who his parents happen to be. For his part, the student, more and more aware of the importance of his social mission, will try to prove equal to it and will more easily than in former days resist the temptation to become a dilettante He will work more zealously and will think twice before choosing his occupation

Provided that the following conditions exist a rational school system, easy access to studies of various sorts, a diligent pursuit of learning on the part of the students; then society can be confident that it has at its command and at its very foundation a form of public education which will keep it well-balanced and make its future secure. Were this the case, our society would number

among its citizens many of those whom the English call "right men in right places"

Alas! In Belgium, as elsewhere, we are far from that ideal state in which every man follows the profession most suited to him. The least that can be said is that little has changed since Pascal pointed out in his *Pensées* that the most important thing of all in life was the choice of a profession, and that it was blind chance which made this choice.

Everyone was quite convinced of this fact, but it was brought home to us even more when recently a careful inquiry was held on this subject by our national Gallup poll. The University Institute of social and economic information (*Institut universaire d'information sociale et économique*).

Under the general heading "the choice of occupation among workmen and clerks" citizens of every sort were invited to express their opinion of their own occupation When their replies were brought together the fears of even the most pessimistic were found to be surpassed.

It was especially evident that a large number of people carry on their daily work with little enthusiasm. More frequently even than the schools, it is their parents whom they hold responsible for their unfortunate position Statistics show that more than 50 per cent of workmen and clerks are in a profession by no means chosen by them

Have no illusions either on the underlying motives which determined this choice! It would seem that fewer and fewer people believe that the call of a clearly determined vocation should be obeyed. On the other hand, the wish to be engaged in a profession both easy and unexacting is indisputably apparent. It must be confessed that in the world of workers, technical education, which guarantees preparation for a given occupation, and which is already so highly developed in Belgium, is little liked Rightly or wrongly (I believe it is wrongly), many would still prefer apprenticeship in a factory. I do not set myself up as a judge. I point out, with those who held the inquiry, how persistent is this unfortunate prejudice against which educationists, aware of the values at stake, must without fail fight. We must fight with equal ardour elsewhere against the prejudice in favour of a paper qualification with which people are too easily satisfied for its own sake, sometimes without sufficient thought for the training which it represents or for the openings which it offers. This has led to the granting of an exaggerated number of certificates, especially by private institutions. Those who receive them swell the supply of workers to a point far exceeding demand.

This "government by means of certificates and degrees" will gain an even greater hold because it will be supported by the truly functional society which is gradually establishing itself. In-

deed, formerly any individual, provided that he was endowed with certain minimum aptitudes—and of this he himself was the sole judge—could set himself up as an architect, a dentist, a nurse, a chemist, etc. To-day—a change brought about by the professional associations—more and more laws are being passed to regulate this domain, and candidates can gain access to it only if they fulfil certain strict conditions, particularly with regard to study.

It is clear that everywhere order and organisation are needed if our strength and resources are to serve democracy with maximum efficiency Education, pledge and safeguard of all other social values, could not remain an impassive spectator. On the contrary, its part was to make easy and to prepare this establishment of order.

This fact was clearly understood by the Ministers of Education who have succeeded one another since the liberation Above all, by their side, a whole phalanx of men of action and of educationists like the Secretary-General Julien Kuypers, and like L Verniers, Van de Veegaete, and others, have tried to bring more harmony, cohesion, and simplicity into the heart of our school system

For how, indeed, can one dare to speak of guiding young people wisely if, as soon as they start school, they are sent journeying along one particular branch of a network of schools which have divided at far too early a stage They are as if caught in a succession of diverging railway lines, so that it is impossible to move back and start afresh or even to choose between the different paths The first condition essential for judicious guidance of youth is a system of schools freely interconnected by common landings where all school children, having passed through courses of parallel study, meet at the same level and may, if advisable, change from one type of school to another with as few problems of readaptation as possible.

Thus in Belgium, as elsewhere, the problem of youth guidance comprises two distinct aspects. a scholastic aspect and a parascholastic aspect We will consider them one after the other.

Organisation of the School System

The first rule found necessary was that to each period of education should be given the mode of activity obviously demanded by the normal needs of the pupils under consideration.

Until now, indeed, not only did the system, composed as it was of autonomous schools, force children to choose their type of education at the age of 12, but, as a consequence of an eagerness easy to understand, the head of every establishment tended to secure as early as possible a firm hold on the children. He who had a secondary school tried to strengthen it by a primary school, preparatory in character. He who was in charge of a primary school decided to ensure a supply of recruits by setting up a kindergarten.

The danger of a preparatory school of this kind, whose only goal was to be found in the school above it, was that the true psychological needs of the children were sacrificed to aims which were often arbitrary and sometimes ill-suited to the nature of the children.

The authorities, acknowledging the demands of psychology and wishing to bring about a change in these establishments whose objective was too far distant, asked each school to place its aims and general action within the limited framework imposed by the age of the pupils.

This meant that the preparatory classes of intermediate schools (*écoles moyennes*) more and more cast aside their formal character and became purely and simply primary schools. As the types of education become more closely connected one to another there is a tendency to suppress all these preparatory classes preparing for supplementary examinations for entrance into the desired type of school (*classe de repêchage*). The large number of these classes proved the general incoherence of the system

But the moment has come to examine this system in detail, beginning with the schools for the youngest children

First there are nursery schools These were, until recently, exclusively voluntary or else municipal. Nowadays, for reasons stated above, the intermediate schools have in their turn set up nursery classes, so that in them children can start a complete course at a very early age.

The primary schools themselves formerly consisted of different types, namely—voluntary or State schools, developments of the former " small schools " for the children of the lower classes, and the preparatory sections of the intermediate schools. These categories systematically ignore each other, were under different authorities, and followed a different syllabus.

Further, when the grammar school (*Athénée*) had in connection with it no complete preparatory primary department, it organised a special preparatory class where teaching was on the traditional grammar school lines. This " VIIth form " made it possible for pupils to be accepted one year before the end of their primary studies.

In practice, such an organisation for children resulted in a purely arbitrary determination of the type of education to be received, a choice that was sometimes made at the age of 6. That such a state of affairs should continue was neither in the true interests of democracy nor acceptable to the logic of the new theories of education. For this reason the Ministry has undertaken to solve these difficulties by assigning to all primary schools, without distinction, a period of six years (from the age of 6 to 12), and an identical, though flexible, curriculum.

At the age of 12, on leaving the single-line track of the primary

school, the child has for the first time to choose between the various roads which lie before him. This first problem of choice was complicated by the fact that, until now, to obtain legal certificates in higher education a course of fixed studies had to be begun at the age of 12 (law of 10th April, 1890, 3rd July, 1891, on the granting of certificates for intermediate studies).

The practical effect of these unreasonable demands was that at the age of 12 all children intended for higher studies knew that they would meet in the Latin VI form. Meanwhile their comrades on the modern side, in the intermediate schools, in the vocational schools, in the upper classes (10th degree) of primary schools, etc, had to remain tied to inferior types of education, which could lead only to subordinate positions (except in the engineering profession which held an entrance examination which, although fairly difficult, was always of easy access). What was the general effect on education as a whole? Many schools for the rich and, on the technical side, many schools for the poor.

We will not here begin again the trial of such an organisation, in the name of democracy and of a healthy educational logic. This choice which a child of 12 is forced to make seems at the very least premature and all the more regrettable since, in practice, and because of the regulations explained above, it was often irrevocable.

For a long time, and especially in recent years, the effort made to reorganise the school system has shown itself to be an expression of the desire to destroy all this " one-way traffic " and to postpone as long as possible the moment at which the child must choose his form of education

As a step in this direction it is of interest to note that in 1923 the intermediate schools which, until then, had been autonomous brought their syllabus into line with the first course of studies in the humanities (in the *Athénées*) and entered into a close union with the schools in which these classical subjects are taught. By this action they ceased to be a blind-alley in the educational system.

But it is especially since the liberation that measures of reform (normalisation) follow swiftly upon one another. First, so that a general reorganisation of the school system could be carried out, the principal types of education were regrouped around the Ministry of Education. The status of secondary commercial schools was raised so that those holding their diplomas might go straight on to the Higher Institutes of Commerce and have the same status as those studying the other sections of the humanities. Those who had been granted diplomas in the Latin-Mathematics section were admitted to the faculties of Science and Medicine, formerly a privilege granted exclusively to those who had studied both Greek and Latin.

Finally, a very important move, the law of August 14th, 1948,

allowed the Intermediate Schools Examination Board (*Jury d'homologation des études moyennes*) to continue to demand a period of six years in preparation for its examination, but limited to the last three years the time to be spent in specialisation. In this way, henceforward, during the first period spent in the intermediate schools (from 12 to 15) pupils can change to another group of subjects without risk of lessening the value of their final certificate of secondary studies

The last important effort made towards improving the existing structure was the creation of the "Latin-Science" division, destined to increase still more the possibilities of educating students on the level of the humanities.

All these new facilities bring more and more pupils to the threshold of the universities. More apply for entrance than the lecture-halls can hold or than the normal needs of the liberal professions can absorb To meet this situation, the University of Brussels at first set up, after the liberation, an entrance examination. This idea, which was so attractive in principle, was approved by the Ministry. Alas! afterwards it was seen only too clearly that the problem was not yet ripe for solution.

Those universities which held an examination ran the risk of being abandoned in favour of those which continued to give a warmer welcome to intending students. Fearing that they might thus seem easily duped, the former gave up their examination, and nowadays all continue to admit everyone who is able to pay the fees The total numbers of students is a source of boasting, as if universities were football grounds on the day of a big match.

The only sign of guidance at this level, and very discreet it is, appears in the new regime which is strengthened by scholarships The commission which grants these latter tends to favour especially those who wish to enter careers as yet not over-popular (such as certain categories of engineers) at the expense of such overcrowded professions as that of the law.

Belgium already has at its disposal thriving technical schools in which the vocational education of its future men and women workers is carried on. But even if these schools succeed quite often in attaining single objectives, on the whole their organisation leaves plenty of room for criticism. They have been accused of devoting themselves to premature specialisation without sufficient thought for culture in its wider sense. Moreover, this organisation, developed outside the schools, had no connection with that of education in general, for which reason these new vocational schools were outside the general scheme and both pupils and teachers were subject to many inconveniences.

All these facts have led to reforms whose aims are, in truth, many: vocational schools have been brought into the general scheme by means of a statute parallel and closely akin to that

controlling most of the other schools which safeguards the interests of the children, etc Such reforms have as their main object the moulding of all the different varieties of education, without distinction, into a coherent and well-ventilated whole, in which every child, whatever may be its position in life, may easily find the type of education it requires and preparation for the career most suitable to it

It is noticeable that training by means of apprenticeship in a factory is giving way more and more to vocational training in schools

Recently the Minister has crowned the combined activities of his department at this level with a projected law to raise the school-leaving age to 15. Schemes in process of development can be summed up in the following outlines·

From 3 *to* 6, municipal or State-controlled nursery education, each controlled by an identical educational statute

From 6 *to* 12, municipal or State-controlled primary education; controlled by one and the same educational statute formulated in the plan of studies of 1936.

From 12 *to* 15, intermediate education, with parallel divisions Latin side, modern side, pre-vocational side (pre-agricultural or pre-industrial for boys, domestic subjects and mothercraft for girls) by the side of which is found the first course in technical education, all these forming at this level a course of studies which ends when the pupils reach school-leaving age, soon to be fixed at 15

Beyond this stage education can be subdivided again into the various courses followed by pupils from the age of 15 to 18, and then finally university education, where, as is well known, the fan of specialisation opens at its fullest.

For adolescents already at work at the age of 15, it is thought more necessary that a compulsory period of perhaps 100 hours a year, for example, should be spent in an educational establishment either at industrial classes held in the evening or on Sunday or in seasonal classes.

The accompanying plan will show more clearly than any explanation how the projects in view, by providing at regular intervals large common landings, could bring clarity and balance to our school system. There is no feeling that the regular courses of study crowd one into the other; yet young people who wish to change the type of education they are receiving would find it more and more easy to do so.

Guidance by means of Organisations outside the School System

Vocational Guidance. It is acknowledged that Belgium, with America, was one of the cradles of this new technique.

This is not the place to trace every detail of its history. We will content ourselves with recalling the principal dates of its evolution and development.

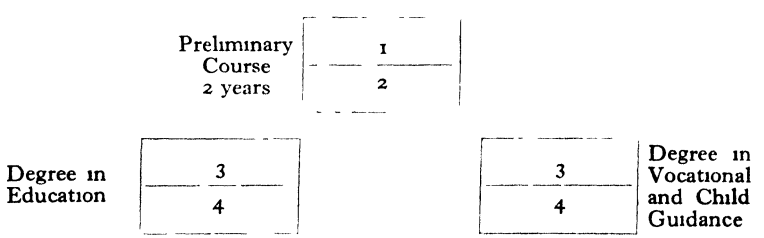
In 1909 there was set up in Brussels a "Belgian Society of Educational Techniques" (*Société belge de pédotechnie*) which, among other aims, proposed to study and follow up the general behaviour of children after leaving their primary school. The prime movers of this society were later to make a great name for themselves in Belgian education. They were Mr. Christiaens, Dr Decroly, and Mr. Van Biervliet.

They wanted more than mere theory, so they very soon thought of vocational guardianship (*la tutelle professionelle*), which gave rise to their idea of writing "Monographs on various trades" and of making it their business to settle the young in suitable employment. In 1919 their centre began to serve all districts of the Brussels area

As this first centre increased in resources and in importance, thus also did ambition grow In 1920 classes were held here to train future Vocational Guidance advisers who would spread their ideas by founding centres throughout the country.

From 1923 this training was made considerably more thorough and was largely handed over to the School of Ergology (or of the science of work) directed by Professor Drabs. This school has already granted 200 certificates to Vocational Guidance Advisers, many of whom are foreign.

Finally an Order in Council (*Arrêté du Regent*) dated 13th January, 1947, raised the status of these studies even more by entrusting them to the universities From henceforward they fit into the following scheme.



Meanwhile the Ministry of Education was taking an even greater interest in this question, and on January 20th, 1936, in the Schools Museum it founded a national centre responsible for gathering information and for organising the working of the whole system, whose centres were springing up here and there, thanks to the initiative of the provinces, of the municipalities, and of private individuals. In 1947 the State itself undertook the setting up of its own centres, especially for child guidance; these were housed

in certain schools or were independent. On this point I would mention the combined centres at Paturages recently visited by students from the University of London Here the Vocational Guidance Centre is joined to a School Medical Inspection Centre established by the district.

For 1949 the distribution of centres recognised by the State (81) is as follows·

(*a*) *French-speaking region* 37 centres, of which 18 are organised by public authorities (provinces and local councils), 14 are organised by the provinces, 4 are organised by local councils; 19 organised by private initiative (notably 18 by the Young Christian Workers (J O.C.).

(*b*) *Flemish-speaking region*· 49 centres, of which 4 are organised by local councils (the bi-lingual offices of the Brussels region and of the Diest region), 1 organised by the old pupils of a Royal Grammar School (Ypres), 44 by private initiative (of which 42 have been organised by the Flemish Young Christian Workers).

As a whole, they have a modest enough aim, very rarely aspiring to the thorough investigations met with in certain psychological clinics abroad In these matters, for instance in the education of abnormal children, Belgium still has much to do.

The regulations governing these centres have been fixed by the decree of August 21st, 1937, which granted subsidies only if a minimum amount was spent on equipment and a minimum of formalities were required for each examination

We will say no more about equipment, for one can easily imagine of what it consists. As for formalities, they must at least include

(i) a thorough medical examination;
(ii) an inquiry made into home conditions and school life,
(iii) a psychotechnical examination,
(iv) the compiling of a dossier for each child;
(v) a written communication to the head of the family, or to any other person in authority, informing them of the results of the consultation.

On the whole, the practitioners of vocational guidance are already most pleased with their first results and are only too willing to point out that 80 per cent to 90 per cent. of those who come to them have been successfully treated, meaning thereby that this is the percentage of their one-time clients who seem to have found, thanks to them, an occupation to their taste.

But this, alas, is only the optimistic opinion of specialists still in the first flush of enthusiasm More objective pronouncements are somewhat more reserved on this point and, for example, the

Jacquemijns inquiry mentioned above states, "Vocational Guidance is still in its infancy. It is little or badly known" The truth is that propaganda of this sort cannot achieve its purpose in a few years For a whole attitude of mind must be changed to get accepted the idea of measurement and of scientific, rational thought at an all-important moment of life.

When men and women choose their profession with as much care and thought as they give to choosing a motor-car, they will already have gone a long way towards guaranteeing their happiness When that day comes, propaganda on behalf of Vocational Guidance will prove as unnecessary as the defence of medicine would be to-day. Especially since, in the meantime, by the help of experience, our body of advisers will have gained much in quality and greater spheres of action will lie before them

Yet all these innovations would be vain if after having urged the child along one path we did not give him in practice the means of reaching his goal, even if his parents are not in a position to pay for his studies The Belgian Government has been concerned with this point also and has recently more and more developed its policy of scholarships which appears increasingly effective.

Thanks to these scholarships certain university students with no private means whatsoever have been able to continue their studies. But the number of these is, it must be confessed, still very small. The preliminary formalities, which, formerly, went so far as to demand a certificate to prove that applicants were penniless, have been considerably lightened. The idea of loans for further education implying a repayment on the part of the student has been more and more abandoned and replaced by grants with no thought of later repayment

Thus, gradually, and above all without clash or upheaval, in our country, as in other civilised countries, we see shaping itself an educational system which will be both more rational and democratic than the one which we inherited from our ancestors

The general tendencies all gravitating round the idea of a better guidance of youth can be summarised as follows

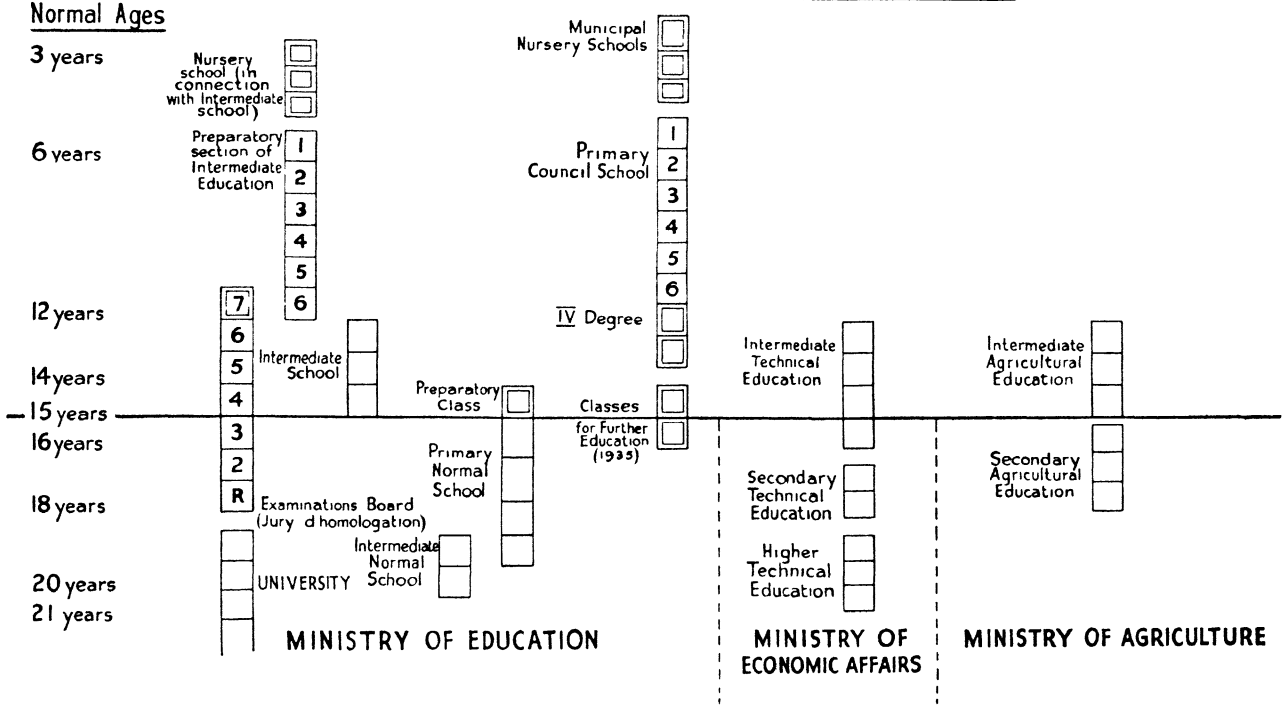
(i) Reform of the school system by creating parallel courses of studies separated one from the other by common landings, with the object of establishing, when an equivalent point has been reached in various types of education, and to make easy any eventual change from one type to another if necessary.

(ii) More widespread and improved Child and Vocational Guidance, which must be at hand whenever a choice is to be made to bring to the aid of the student a new body of information about himself and his chances of success.

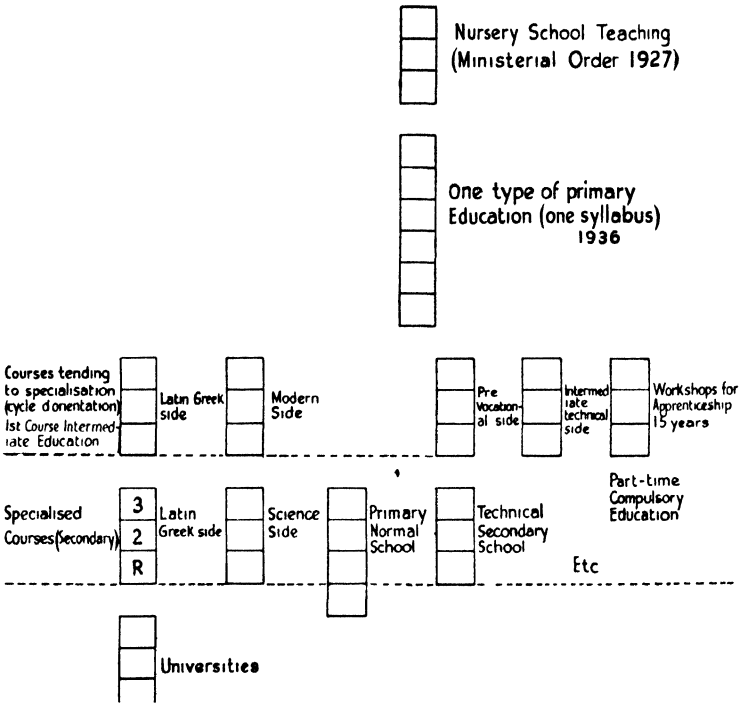
(iii) Replacement of apprenticeship in local workshops by vocational education

(iv) Grants of scholarships and help to necessitous students to

PLAN OF TRADITIONAL EDUCATIONAL SYSTEM



FOR A REFORMED EDUCATIONAL SYSTEM



be more general so that every adolescent, without consideration of money, can reach the level of knowledge and education to which he has the right.

Most certainly we have not travelled far along this road of democratic generosity. But at least it has been marked out for us and all agree that in it is to be found one of the best tokens of the future happiness and prosperity of the nation.

MARION COULON.

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CHAPTER FOUR

DEMOGRAPHIC CHANGES AND EDUCATION IN BELGIUM

FLUCTUATIONS in the population and the social consequences they entail have been satisfactorily examined by sociologists. A comparative study has enabled us to observe that populations undergo regular numerical changes, for which a law can be formulated with sufficient exactitude for it to be possible to foresee the increase or decline of a certain population, and to establish its numbers in the intervening years.

It will also be noted that the demographical state of a nation depends on the number of families who compose it, and the number of children born therein

We can now begin to examine population problems in Belgium from both a quantitative and a qualitative point of view.

Quantitative Analysis

First Example

The last census of the Belgian population, taken a few years ago, is given in the excellent pamphlet which M. A. Dufrasne has devoted to the demographical situation of that country (1946). We can draw important conclusions from it

In 1830 there were 4,076,513 inhabitants, and on December 31st, 1939, 8,396,276. In the course of a hundred years the population has doubled.

We must, however, examine the changes of this population The following statements can be made:

(*a*) Since 1830 the number of marriages has remained constant.

(*b*) The birth-rate per thousand rose till 1886, and has since declined

1880	31 13	1942	12 84
1939	15 34	1943	11 63
1940	13 30	1944	15 04
1941	11 92	1945	15 25

—the exact number of births is the following

1830	131,676	1890	176,595
1850	131,416	1901	200,077
1860	144,668	1910	176,413
1870	164,572	1930	151,406
1880	171,864	1939	128,758

The number in 1939 is equal to 64 per cent. of the number in 1901.

(*c*) The death-rate has been declining, from 25 75 per thousand in 1830 to 13 77 per thousand in 1939.

From these figures it can be seen that though the birth-rate is decreasing, yet there were more births than deaths· in 1900, 84,000; in 1939, 13,172.

If this conclusion is analysed, especially with the methods of Kuczynski, the net rate of reproduction can be established. In 1939 this rate was 0 86, that is to say one hundred girls gave birth to only eighty-six girls. In these conditions, first of all the number of new-born babies, and later the total population, is decreasing from generation to generation, following a geometrical progression with a ratio of 0 86 (Dufrasne, p. 3).

After 1935 we cannot be certain of the numbers of our population but a decrease is sure. Let us prove this with the aid of a few figures. The Belgian population rose to

8,400,792 inhabitants in 1940
8,393,171 in 1945

It will fall to

8,354,000 in 1950	7,868,000 in 1970
8,287,000 in 1955	7,666,000 in 1975
8,185,000 in 1960	7,453,000 in 1980
8,045,000 in 1965	

The distribution in the regions is interesting. Comparing three regions we get the following figures for 1940 and 1945

	1940	*1945*
Flemish region	4,163,171	4,205,435
Walloon region	2,945,182	2,856,661
Brussels	1,274,411	1,282,438

Innumerable analyses could be based on these figures We shall confine ourselves here to the reason for the progressive decrease. It can be ascertained that

(1) The number of marriages remains constant,
(2) there is a decrease in deaths;
(3) there is a decline in births.

We can then conclude that the number of children per family has decreased.

If we roughly compare figures for 1910 and 1930 we can state that.

Number of Families	*1910*	*1930*
With no children	19 per cent.	24 31 per cent
With one child	20 61 per cent	27 69 per cent
With two children	18 47 per cent	19 82 per cent

In other words the number of families with many children has diminished, while there is an increase in the number of families

with only one or two children. This situation will be accentuated in the coming years. We must note that these statistics are far more expressive when referred to particular cases During an inquiry into a group of training colleges (*écoles normales*), one of my students stated the following

Of the 15- and 16-year-old pupils,

50 per cent are only children
35 per cent have one brother or sister
14 per cent have two brothers or sisters
1 per cent have three brothers or sisters

Of the 17-year-old pupils and the older ones,

56 per cent are only children
32 per cent have one brother or sister
6 per cent have two brothers or sisters
6 per cent have three brothers or sisters

Now the training colleges (*écoles normales*) recruit their pupils from working-class, economically handicapped, or even destitute families That is to say, from families whose birth-rate is in general high in comparison to that of the middle class

These figures show that there is an increase in the number of only children in Belgium. The psychology of the only child differs from that of the child who has brothers or sisters, and in the various countries a number of books has been devoted to the study of the only child A critical analysis of researches on this question by Dr. A. Van Krevelen can be found in his important work (*Het Enige Kind,* Utrecht, 1946). Before continuing I should like to summarise a thesis presented to the University of Athens by Mme Catherina Strifton-Kriaras, whose conclusions I have been able to verify in the socio-medical service of the *École normale* Charles Buls. Dr. A. Van Krevelen bases his research on nervous children observed in the child-guidance clinic at Leyden, and he compared these to children from ordinary schools. The research of Mme Strifton-Kriaras was first done in the children's normal environment in the experimental school of Athens University. Thirty-five children between the ages of 6 and 7 were examined in various ways with the help of different psychological material. The author wanted to examine the children's social behaviour, the ways in which they adapted themselves to school, their defects in relation to gregarious reactions and their tendencies to impose themselves on others. He has also followed up his research by a physical analysis (resistance to pathogenic agents, nervous states, mobility, movement, language, behaviour during games, scholastic attainments, etc.). The results lead the author to maintain that one-third of the only children are sociable and two-thirds are unsociable. Among the first he distinguishes the

truly sociable (8·6 per cent.) from the partially sociable ones (25·7 per cent.); into the second category he places those of aggressive disposition (40 per cent.) and those leading a solitary existence (25 per cent.).

The tendency to dominate others is a marked characteristic of the only children. Those of an aggressive disposition express this characteristic by violence, and the ones who are sociable by signs of egoism. Those who lead a solitary life and those who are truly sociable express it in gentle ways. The tendency to dominate is often accompanied by self-confidence and an aptitude for commanding. The solitary children have none of these qualities and the aggressive ones only to a mediocre extent. The only child, except for the one who is solitary, likes to play. The character defects so often noted among only children decrease in quantity, the worst offenders are the aggressive types, then come those sociable with a tendency towards egoism, then the solitary children, and the faults disappear only in those truly sociable. The intelligence of these children is often high, and precocious. This accounts for their scholastic attainments being satisfactory.

Physically they have a tendency to be agitated, a weakened nervous system, and poor health; those who are truly sociable are often an exception to this. As for linguistic ability, there is either a marked advance or backwardness (an advance with the sociable children and backwardness with the others).

Without here making a detailed study we must note that the need to integrate only children as fully as possible into social life, and to put them into contact with other children of their own age, which they do not find in their home surroundings, justifies

(i) Scouting and guiding, and general youth movements as out-of-school activities,

(ii) the extension of scouting activities in school life, and

(iii) provision of theoretical instruction in morals for the benefit of those who have no practical experience of acting from motives of brotherly affection.

The movement in favour of medico-psychological clinics emphasising mental hygiene, both at the child's and at the adolescent's level, is even more applicable to only children, as they are more sensitive to nervous and emotional disorders. There is a tendency to think that such educational innovations are the result of progress in methods of teaching. The correspondence which here has been noted between the introductions of certain methods of moral education and the increase in the number of only children cannot be accidental. In the following example we shall see that the social conditions play a significant part in bringing about change.

Second Example

We shall for a moment leave the pedagogical repercussions resulting from the increase in only children, in order to examine the demographical situation of a large town such as Brussels. We shall distinguish the real town of Brussels from the town-and-suburbs which constitute Greater Brussels.

Brussels had

In 1914	171,697 inhabitants	In 1925	213,915
1918 before the annexing of Laeken, Neder-over-Heembeck, and Haren	164,978	1935	195,268
		1939	189,036
		1944	182,177

Brussels had 10,000 inhabitants more than in 1914 before the annexation of the three districts mentioned above.

Let us compare these figures with those of the total population of Greater Brussels

	Brussels	*Greater Brussels*		*Brussels*	*Greater Brussels*
1856	150,244	254,201	1920	154,801	798,875
1900	183,686	621,559	1930	200,433	892,183
1910	177,078	755,031	1944	182,177	925,000 [1]

There are many causes for the depopulation of Brussels. We will mention the most important ones

(1) Building of hotels, banks, and commercial flats, etc.

(2) The demolitions due to extensive work on the railways.

(3) The transformation of dwelling flats into commercial flats, and the struggle against the slums and blind alleys, the construction of spacious buildings, and the abandoning of cellars as places fit to live in. In the working-class districts the decrease varies from 25 per cent. to 75 per cent.

The number of school children follows the fluctuations of the population, and in the city it becomes smaller from year to year

(1) *Infant School Population (écoles gardiennes)*

In 1938–9 it rose to 2,929	In 1942–3 it fell to 2,243
1939–40 it fell to 2,913	1943–4 it rose to 2,271
1940–1 it rose to 2,957	1944–5 it fell to 2,192
1941–2 it fell to 2,256	

(2) *The Number of Children between 3 and 6*

In 1940 it was 4,280	In 1943 it was 4,000
1941 it was 4,250	1944 it was 3,600
1942 it was 4,100	

This fact partially explains the depopulation of the infant schools (*écoles gardiennes*), but we must add

[1] Cf The pamphlet, La Ville Bruxelles Les recensements de 1930, pp 60 and 69 These figures do not seem to correspond with those quoted above in the first example. This is because M Dufrasne takes a larger area than we do here.

(*a*) People leaving the town in search of cheaper lodgings in the outskirts;
(*b*) the departure of Jewish children because of the occupation;
(*c*) the transformation of certain districts,
(*d*) the propaganda of private schools in certain districts

(3) *The Number of Children Born*

In 1922	3,198	In 1930	2,497
1923	2,984	1935	1,439
1924	3,079	1940	1,230
1925	2,675		

In 1945 1,915, of whom 851 had parents from Brussels
1946 2,055, ,, ,, 1,020, ,, ,, ,, ,,
1947 1,990, ,, ,, 1,052 ,, ,, ,, ,,
(Children born in Brussels maternity homes are registered in Brussels though really belonging to suburban parents)

(4) *The Number of Children of School Age*

In 1935–6 (children born between 1922 and 1929)			21,792
1936–7	21,091	In 1941–2	16,398
1937–8	19,917	1942–3	14,900
1938–9	18,478	1943–4	13,357
1939–40	17,526	1944–5	12,244
1940–1	16,315		

Thus in less than ten years this population has dropped from 21,091 to 12,244

(5) *Decrease in Primary School Population*

In 1918–9	11,840 pupils	In 1940–1	9,601 pupils
1920–1	9,960	1941–2 [2]	9,064
1921–2	12,960 [1]	1942–3	7,365
1925–6	10,348	1943–4 [3]	7,226
1934–5	10,254	1944–5	7,384
1935–6	10,472	1945–6	7,201
1939–40	10,161	1946–7	6,862

The decrease in population affects denominational schools equally. Nevertheless the rhythm of repercussion here is slower than in the State schools. Figures for this have been published in the pamphlet entitled *Crise des Consciences: Redressement* (AC H. edition, 1947). As for Greater Brussels, if the 1939 figures are compared to those of 1945 we see that the population of *adoptées* and *adoptables* primary schools has increased.

THE PRIMARY SCHOOL POPULATION OF GREATER BRUSSELS

Council Schools (State)		*"Adoptee" and "Adoptables" Schools (Catholic)*	
In 1939	*In 1945*	*In 1939*	*In 1945*
44,017	30,121	25,231	25,675

[1] Annexation of three districts
[2] September 1942, exclusion of Jewish children 7,596
[3] Schools destroyed

Such are the facts. What repercussion do they have on the organisation of education? It must first be noted that the figures given have only a relative value. For instance, the denominational schools increased artificially as a result of the war and because of the political oscillations of the lower middle classes who sometimes support the Right, and sometimes the Left, according to events, opinions, and advantages

However, the following conclusions can be admitted.

(1) The primary education of a number of districts of Greater Brussels (especially of the non-rural ones) should be reorganised, the situation should be reviewed with a view to the future and not to the past or the present, i.e the conception of large barrack-like schools must be abandoned, valuation accorded to quantity, the number of pupils, must be replaced by quality in teaching, the curriculum must be revised, the organisation must be made more supple, and there must be a movement in the academic world to give support to the idea of the family as an educative institution there should also be created a medico-social service in the schools which shall be adapted to the school population and arranged in the poorer districts

(2) The success of denominational aducation seems to be due to permanent and also to transitory reasons It is indisputable that the fertility of Catholic families is greater, this means more clients for the denominational schools But this clientele is also due to the fact that the organisation of State schools is not complete in all the municipalities, and that, at the moment, many working-class parents prefer a fee-paying education to a free one

Other more disturbing problems will appear when we examine the question from a qualitative point of view

Third Example

Might I be permitted to insist on a phenomenon which belongs to mankind alone, that of "social capillarity", as A. Dumont terms it (*Dépopulation et Civilisation*, Paris, 1890), for it belongs to none of the gregarious animals.

Human society feels the need for expansion, a desire to make its way from one class to a higher one. This interprets the individual's desire for greater comfort, for greater material well-being, and also for greater respect and dignity.

This phenomenon is accelerated both by the effect of technical progress and the state of our civilisation, and by the decrease in population

A more precise statement is again necessary.

(1) Social capillarity is a factor in the decrease of the birth-rate. In many families where the parents fail to climb the social ladder they try to let their children accomplish their own ambitions. The father's profession seems too hard, too badly paid,

too little esteemed, and the parents make a decision for their children. In this, on the whole noble, aspiration, we can see the whole grandeur of humanity, for those who feel it must make small daily sacrifices. This means that care must not only be taken in respect of material resources, but also regarding paternity.

(2) Social capillarity then entails a sort of negation of one of the prime purposes of the family, if we look upon the latter as an institution set up to produce several children

Moreover, it will be clear that this negation quickly affects homes where capillarity is strongly desired and in which, to make the future of their only child more assured, both parents go out to work. In those countries where the family is still preserved, whatever the reasons for this might be, the birth-rate remains high, and social capillarity is manifested by desires other than those of social betterment Let us note that the absence of social capillarity often has as its corollary the exclusion of progress

(3) It must immediately be stated that in democratic States, where equality has been made the right of every man, capillarity is an important factor, provided that the political organisation does not oppose social rise.

In analysing the problem in our country, it may be noted that capillarity did not act in the same way in all social classes. As far as the miners and the factory workers of the last century were concerned, they found it impossible to rise to the ranks of managers or industrial barons But their capillarity was ultimately expressed by the well-known phenomenon of children leaving the mines and the factories

(4) In the democratic societies where capillarity has become established it has led to a rise in the number of officials and civil servants. Poor parents, who wish their only children to rise socially, pay for their instruction, since they want them to acquire diplomas, and to be capable of competing for examinations and occupying administrative posts. Instead of handling tools like his father, the son handles the pen.

The consequences of these ambitions are manifold

(*a*) In the large towns the fourth forms (*quatrièmes degrés*) are rapidly declining State schools are being abandoned by those already taking specialised courses. Moreover, those who have no special aptitudes and are preparing for manual and unskilled jobs are in these classes. As a result the intellectual standard of these fourth forms has declined considerably. This has been accentuated by the fact that, contrary to the law, these fourth forms, which used to be centralised, have been decentralised. This has increased their numbers and made them skeleton-like in their diversity. The abandoning of the fourth forms as a result of social capillarity leads the pupils to other studies. Which ones?

(*b*) Before answering that question it is important to note the number of children who do not at the moment attend free primary schools. The parents make plans for the future from the time when the children are very young, and place them from the first in private schools, either in Catholic, or in non-Catholic, or in the preparatory sections of intermediate schools (*écoles moyennes*), or in vocational schools.

Here are some interesting statistics of the school population (boys and girls) in Brussels.

A POPULATION IN THE PREPARATORY CLASSES OF INTERMEDIATE SCHOOLS

In 1920	*In 1930*	*In 1945*	*In 1947*
1,347	1,164	1,001	1,153

B POPULATION OF THE FOURTH FORMS

When founded in 1908	*In 1930*	*In 1939*	*In 1945*	*In 1947*
403	1,009	1,551	1,333	1,076

C. POPULATION IN THE FIRST YEAR OF VOCATIONAL SCHOOLS

	In 1930	*In 1939*	*In 1945*	*In 1947*
Born in Brussels	96	211	228	206
,, ,, the surburbs	171	388	525	508
,, ,, the provinces	330	765	1,050	1,036
Total	597	1,364	1,803	1,750

D POPULATION IN THE FIRST YEAR OF THE "ATHÉNÉES"

	In 1935	*In 1939*	*In 1945*	*In 1947*
Born in Brussels	105	120	104	90
,, ,, the suburbs	101	92	142	138
,, ,, the provinces	11	11	12	11
Total	217	223	258	239

E POPULATION IN THE SECONDARY VOCATIONAL SCHOOLS OF BRUSSELS

In 1930	*In 1939*	*In 1947*
248	294	287

F POPULATION IN THE "TRAINING COLLEGES" OF BRUSSELS

	In 1930	*In 1939*	*In 1947*
Training department	734	390	307
Preparatory department .	282	485	307

On examining these figures we come to the following conclusions

(1) That the numbers of the preparatory departments of the intermediate schools remain constant in spite of the decrease in the general population.

(2) That the numbers in the fourth forms are decreasing (by five hundred pupils in less than eight years).

(3) That the numbers in the first year of the vocational schools are constantly increasing (by more than 300 per cent. in seventeen years).

(4) That the numbers in the first year of the *athénées* remain constant or even increase.

(5) That the numbers in the demonstration schools of the training colleges remain constant and have a tendency to increase.

(6) That the number in the preparatory sections of the training colleges—which includes pupils between the ages of 12 and 15—is decreasing but still exceeds the 1930 figures

(7) That the population of the training colleges has decreased by more than 50 per cent

This means that parents want their children to go to fee-charging schools, even at the primary school age, and that they despise free popular primary education. This is carried out in two different ways Some send their children to fee-charging schools from the age of 6, others from the age of 12. The result is that the fourth forms now have an insufficient number of pupils, and that those they have are of a mediocre quality

Thus, in the midst of a democratic regime, popular education is on the decline, through the will of the parents. The Minister of Public Instruction is accentuating this movement in the provinces by creating numerous intermediate schools (*écoles moyennes du degré inférieur*), and these establishments have at once had a great success

(*c*) The elementary stages of the training colleges, which is a preparation for the profession of elementary school teaching, are gradually being abandoned. This fact is international and particularly serious Unofficial statistics, relating to the state of the whole country, have been published in various professional documents.[1] The training colleges of the communes alone preserve their high numbers.

GENERAL STATISTICS ON EDUCATION IN THE TRAINING COLLEGES OF BELGIUM IN 1946

Number of Students	*State Education*	*Denominational Education*
Infant section	199	549
Primary section	2,387	5,121
Intermediate section	429	443

The numbers and the quality of the training college population have greatly declined. In France there are villages without a single teacher, and a similar situation exists in Holland.

We should note the following figures of the *Tribune* of October 10th, 1946

[1] Cf *Person en Gemeenschap*, No. 1, May 1946, pp 43–4

NUMBER OF DIPLOMAS AWARDED BY STATE TRAINING COLLEGES

Year	*Men Teachers*	*Women Teachers*
1940	404	435
1945	292	314
DIPLOMAS AWARDED BY DENOMINATIONAL TRAINING COLLEGES		
1940	615	865
1945	460	698

The beginning of the 1946 session was catastrophic. There were 14 pupils in the first year in the Women's Training College at Bruges, 8 in Verviers, 16 in Mons, and 8 in Morlanwelz Some training colleges have 40 pupils for five classes.[1]

(*d*) Thanks to the social capillarity, the goal of the pupils after their sixth primary year is directed towards the study for the professions and higher education.

To be precise let us immediately note the numbers of the four Belgian universities.

State Universities	*In 1939*	*In 1945*	*In 1946*
Gand	1,501	2,164	2,245
Liege	2,303	3,056	2,817
Independent Universities			
Brussels	3,311	4,303	3,339
Louvain	5,145	7,205	6,608

In a well-known work, *La Barrière et le Niveau* (Paris, F. Alcan), M Goblet has proved that Latin is considered in France as a distinction of the middle class, and the situation in Belgium is very similar. It may be noted that the number of pupils in the *lycées* and *athénées* has increased, and the numbers in the classics sections are far from decreasing.

NUMBER OF PUPILS IN SECONDARY SCHOOLS

1936–7	57,494,	of	whom	36,065	did	classics
1937–8	61,580,	,,	,,	38,769	,,	,,
1938-9	65,475,	,,	,,	39,358	,,	,,
1939–40	73,432,	,,	,,	42,277	,,	,, [2]

These various assertions prove that social capillarity is deep-rooted in the Belgian population. The decrease in the birth-rate will not modify this phenomenon; on the contrary, the general direction of studies, which following the desires of the families, will be able to vary according to modifications of the most favourable social situations, which can be attained by means of diplomas.

[1] Cf. S De Coster, *La Réforme de l'Enseignement Normal* (*Year Book of the Staff Association of the U L B*, May 1947, p 89).

[2] Cf A Sevrais, *Statistiques et Orientation des Etudes, Revue Générale*, August 15th, 1939, pp 252–59 [The percentages, however, have decreased from 62 to 41 —EDITORS]

Here is a summary of the facts.

(1) The decrease in the Belgian population,
(2) the decrease in the population in the large centres,
(3) the social capillarity

have come to modify the problems of Belgian education.

We have a tendency to be familiar with the conception of the past, and to believe that the future will be like the present. In my opinion the demographical situation must entail a modification in our conception of educational organisation. This, then, is the result of the analysis of the quantitative aspect of the decline in population.

In considering the qualitative aspect another, no less important, result will gradually emerge.

Qualitative Survey

First Example

Statistical records differ according to geographical conditions. The quality of the population, its resources, its markets, its intellectual value, and its creative spontaneity vary notably between town and country, whether the State is predominantly industrial or commercial on the one hand, or agricultural on the other Let us prove this, first by taking examples from foreign countries

In his famous book *Les Deux Europes,* F. Delaisi distinguishes Industrial from Agricultural Europe The frontier of the first passes through Stockholm, Danzig, Cracow, Budapest, Florence, Barcelona, and Bilboa, it then skirts France, passes between England and Ireland and joins Bergen and Stockholm via Glasgow These two Europes differ not only in physiognomy but also in civilisation. In agricultural Europe there are few or even no locomotives, lorries, or cars, and no rapid or powerful transport. The peasant, isolated from the remaining world, builds his own thatched cottage from wood or *pisé* He has no agricultural machinery, rarely an iron plough; most frequently he uses the antique wooden ploughshare that has been handed down to him from his ancestors Since he produces little he has hardly anything to exchange. In most cases he can neither read nor write There is no telephone, no telegraph; just an occasional post office (Paris, Payot, 1927, pp. 26–7.) This isolation makes men cling to their customs and to their parish. It is even expressed in the retention of national costume.[1]

In industrial Europe the situation is different. Here relations are established not only between the towns, but even between town and country. Wealth is more widespread, and the worker's standard of living is high. This prosperity is due to the industrial revolution, to the change which has gone on since the last

[1] The situation has changed considerably in the last twenty-five years — EDITORS.

century, from the draught-horse to steam. In this Europe can be observed a prodigious scientific movement—an enormous advance towards positivism which has sought to destroy the old humanism. In countries like France and Belgium, the Catholic Church has lost control of education. It has tried to regain it by founding school after school, but this struggle, which can be seen in all the so-called Christian countries, has resulted in filling industrial Europe with establishments of culture " where science in all forms and degrees has conquered a great place for itself " (*ibid.*, p 44).

Again, in industrial Europe we note that in the past the Spanish *noblesse,* Italian aristocrats, Hungarian magnates, Galician and Polish princes, all agreed in the limiting of education to schools which were indispensable for the recruiting of the clergy, the civil servants, and the administrators. As for the technicians, engineers, and scholars, who were needed to improve the land by modern methods, they preferred to have foreigners come at great cost, who had no influence over the local population The Church itself, master of immense landed property, adopted this method, which protected both its material security and its moral prestige, and in all these countries it systematically continued higher education in the tradition of the old humanism Without scorning the profits of modern methods, the dangerous handling of science was left to industrial Europe and the overbearing middle class (*ibid*, pp. 44–5).

Recent military events perhaps modify this example, but it shows nevertheless that the population conditions the type and the value of the education. Mr. W A Jessup [1] has told us how in the U.S A. music, drawing, handwriting, domestic science, manual work, and physical education came to be included in the curriculum The author proves with great clarity that the inclusion of these subjects was not the result of the demand of the American educational system, but of the general public, who agitated from outside and broke down the traditional barriers.[2] In this way an interest in singing started, for instance

In the days of the pioneers, drawing, as far as it is an aesthetic expression, did not interest the European colonists, whose utilitarian worries suppressed everything else In a later period, we notice that drawing has a pragmatical significance, since it helped in the performance of mechanical skills (Franklin). According to Jessup the public praised the drawings from the schools of Massa-

[1] W A. Jessup, *The Social Factors Affecting Special Supervision in the Public Schools of the United States* (New York, Teachers' College, Columbia University, 1911).

N. B. de Leener, " Facteurs Sociaux de l'Evolution des Programmes d'Instruction Populaire," *Sociological Archives,* p 78

[2] " Registration of outside opinion upon the curriculum of the schools " (Jessup, *op. cit.*, p. 40).

chusetts at the exhibition in Philadelphia in 1876, and this inspired a progress in its teaching. The visitors appreciated this work from the same utilitarian motives as Franklin, but, as soon as the course was integrated into the general curriculum, teachers insisted more on its educative value, and not so much on its instructional aim.

The most striking example of the influence of social events on education is certainly the introduction of manual work into the American schools. Jessup proves that the success of this activity is linked with two events, which are separated by time, but which converge at a given moment On the one hand it is undeniable that Froebel's ideas had a determining influence. The public was suddenly convinced that intellectual education would gain in depth by the simultaneous training of the senses and the intellect. Nevertheless, the conviction could be born only as a result of a number of social events, which were outside the school, and which forced the school to take action To understand this evolution we need only remember that the U S A. changed in the nineteenth century from an agricultural to an industrial nation, from comprising a number of scattered rural areas into one of overcrowded cities, where, in order that work might be done more efficiently, work was divided as much as possible Vocational training was recognised as indispensable Jessup also points out that another movement of ideas inspired by philanthropy made possible the practice of Froebel's doctrine. Manual skill came to be considered as a means of betterment for the dispossessed classes.

These examples confirm our general thesis If we have chosen them from a different part of the world, it is because the distance makes us perceive the distinctive characteristics more clearly. It would not be difficult to observe a similar introduction of educative subjects into the curriculum of Belgian schools since 1830. We shall quote one example from our own century.

The chief European States are at the moment modifying the structure of their educational system under the stress of new needs, brought about by the recent world war. Under the influence of Socialist ideas there is the question of raising the compulsory school age to 15 or 16. For various reasons, which it is not necessary to enumerate here, Belgium is behind in this respect Nevertheless, the political parties in power have proposed a bill raising the school-leaving age to 15, and the Minister of Public Instruction, foreseeing this, has taken preliminary measures. The raising of the school-leaving age would involve the suppression, or the transformation, of the "fourth forms", the creation of intermediate schools (*écoles moyennés du degré inférieur*) and an adequate scheme for the training of teachers. This last consideration has obliged the Minister of Public Instruction to reawaken the training college education, which had been decadent, and whose disappearance had been forecast twenty years ago. Since the Law of 1925

(*Loi Destrée*), which gave the intermediate schools the right to transform themselves into *Athénées* and *Lycées,* some of the training colleges (*écoles normales moyennes*) have become redundant. Graduates replaced the certificated teachers (*régents*), and the intermediate schools, especially those in the towns, were to disappear. Some other preoccupations, and the actions of a few civil servants at the Ministry of Public Instruction, decided differently. Let us add to these determining factors some other causes, which are outside the problem but equally important.

(*a*) The grievances of the certified teachers (*régents*) and the action of their union

(*b*) The lack of pedagogical training for graduates, since the universities have not revised this training since the institution of the *agrégation* for secondary teaching (*enseignment moyen au degré supérieur*)

(*c*) The high quality of elementary school teaching, a prestige which exists only from the pedagogical point of view

(*d*) The poverty if not the entire absence of training in psychology and pedagogy of adolescence.

It must finally be noted that the revival of the training colleges is linked up with the demographical situation Without realising it, the school-leaving age obeys the rules of capillarity of the lower classes, and in stressing the training college education there is an attempt to attract to the teaching profession those young people who, by this same social capillarity, are attracted towards higher education.

Second Example

This paragraph will be devoted to a most important result We shall prove that, in the first instance, the decline in population has caused an increase in the number of schools, and at the same time improved their quality.

To understand this statement it is important to imagine the atmosphere of the schools where the number of pupils has dangerously decreased This fact has perhaps been due to the decline in population in itself—as is the case of the primary council schools in large towns—or to accidental causes excessive propaganda on the part of a rival school, loss of prestige due to an internal lowering of standards or the establishment of a different type of education, which attracted the children of a district

A school which is thus threatened must either accept its regression and prepare for its disappearance, or must fight against the former, and refuse to be pushed out of existence. The law of supply and demand conditions this particular type of market. The schools desiring to attract pupils must offer advantages, many of a pedagogical nature. One of the methods used for this is the introduction of subjects which are useful to the customers, thus stopping

them from going to other institutions. Let us note that a threatened school is not likely to be tempted to accept the benefits of the demographical state of the district, in order to justify its own fall. Apart from the fact that the school may be unconscious of this state—it will, driven by a professional conscience—try to re-establish its former position. It would, moreover, be difficult for it to admit the suppression of some classes since these would entail the disbanding of the teaching personnel. In a feeling of solidarity with his staff, the director of a threatened school will be inclined to consider the pedagogical problems in relation to the teachers he tries to save. In this way at least two reasons encourage him to develop his school at a time when the demographical evolution is occasioning its decline.

(1) He wants to attract customers through innovations adapted to the tastes of the day, and

(2) He wants to defend the position of his surplus staff.

In its first phase the decline in population also encourages an improved quality in teaching. The quality is safeguarded if there is a surplus of pupils, thus permitting the exclusion of mediocre ability (the policy of selection is never harmful to the reputation of an educational establishment), the quality then comes from the customer, from the adaptability and work of the pupils. It is also safeguarded when there are too few pupils for this accentuates the valuable and distinguishing features of education (the policy of ease is never good for a reputation)—here the quality is obtained through the salesman, through the staff and the methods of teaching.

These observations can be verified in a number of cases, especially in the intermediate education. We have already referred to the *Loi Destré*. For the last twenty years many councils have added an *athénée* section to their intermediate schools (*écoles moyennes au degré inférieur*). This action resulted from the decline in numbers in the intermediate schools. This decrease has been compensated for by the creation of sections catering for higher studies, covering all the syllabus of the *athénées* and *lycées*. This movement was carried further by the addition of a commercial section. The multiplication of one section into three or four has attracted customers, but it has also occasioned a change in staff, which had gradually to be chosen by different criteria, and graduates were preferred to the certificated teachers (*régents*) This evolution does not belong to the past. At the moment some large councils are undertaking similar changes. In the provincial districts, however, where the intermediate schools (*écoles moyennes au degrée inférieur*) had no competition from the *athénées, lycées,* or *collèges,* the need for transforming the school was not felt

The same factor can also be observed in other branches of education. In this way, in their struggle against a numerical

diminution of entrants, the primary departments of the training colleges have had to extend their basis to that of intermediate sections of training colleges. In doing this the directors of schools, supported by the authorities, on whom they depend, hoped to attract pupils to the schools where there was the greatest lack. Moreover, this procedure of creating a new school because the pupils are deserting the lower sections, curious though it may seem at first sight, aimed not only at attracting pupils to the lower departments, but also at abolishing the parallel forms, since the graduate staff was then immediately absorbed into the newly created sections.

Another aspect of the problem is its effects on the position of State education as opposed to Catholic education, and the intervention of the State in this matter.

The situation of independent education and of that of the State is well known. The decline of the population affects both parties, but the decadent part is indisputably that of State education. An awareness of the dangers of the present and the future impelled by the present situation has inspired the Minister of Public Instruction to formulate a new educational policy.

The constitutional principle of our educational organisation is freedom. This freedom has not only resulted in the creation of an opposition between State education and denominational education, but has also divided public education into education by the State, by the provinces, and by the councils. In the past it was the general education of the municipalities in the larger towns, and of certain provinces, which resisted the independent Church schools. This resistance was effective both because of the attitude of positive neutrality, and because of the pedagogical quality of their education. This situation flourished at a time of a population increase, and it was useful in the sense that the majority of the teaching staff in the State schools were communicant members of the Catholic Church. A majority of the Right Wing party allowed, and would still allow, the clericalisation of certain State schools, and in that case the councils and the provinces could only put obstacles in the way to prevent the disappearance of an instruction based on positive neutrality, free choice, and freedom of conscience.

However, in the post-war period the Minister of Public Instruction has realised the need for direction; the struggle against the autonomy of the councils, favoured by the financial deficit of the big towns, has also taken place in the sphere of education. It is especially making itself felt in the campaign for primary education to accept the *Plan d'Etudes*. Once there is unity in the realm of ideas, the unification in the organisation must constitute a further step in this direction It is not at all out of place to observe the relationship between these events and the demographical situation.

(1) The unification of the curriculum expresses—especially in the

smaller communes—a desire to raise the quality of education, and the *Plan d'Etudes* constitutes a better guide than most other plans, which have been barred through long usage and are not adapted to the evolution in pedagogy.

(2) The desire to bring the now decentralised official education under the sole jurisdiction and administration of the State answers the need to assemble all forces and to simplify the action against Catholic education.

We shall not say if this action is good or really justified· we shall not say if it would be preferable to fight effectively against the Catholic education instead of against the council's in the large towns, since the fear of a Catholic majority at the next elections troubles many well-meaning people. Our task is only to point out that the decline of numbers cannot fail to entail a new general policy.

Third Example

In the second phase, where an education was conceived for an excellent demographical situation but is menaced by the falling in the number of the population, the changed situation results in the lowering of the quality.

Let us again observe the climate of a school which is menaced by a deficient demographical situation. Each school year the directors of the establishment are afraid that they will not have the minimum number they need to maintain their classes If this number is not obtained, there is a hunt for pupils, and a plan for battle is formulated. The schools snatch from each other the mediocre pupils, and if they do not win by one method they do so by another. At the end certain children and adolescents are admitted who, in a period of demographical plethora, would, without any harm, be rejected.

On the other hand, the atmosphere in depopulated classes, where pupils are accepted only to make up the numbers, stifles teaching by its mediocrity and, little by little, discourages even the best of teachers.

Finally, in the communes which have a declining population, there will soon be a surplus of teachers, and the classes will be so underpopulated that the State subsidies will no longer be granted. Then the local authorities will have to organise teaching by standards instead of years, a method which has for the last century been condemned by educationalists. Sometimes teaching by standard is an insufficient remedy, and a class must be composed of three or four years to earn a subsidy. The Minister of Public Instruction, who ought to watch over the quality of education, himself destroys quality through his preoccupation with the budget.

Thus a decline in numbers can cause a regression in quality.

In certain respects the plethora of pupils in school can have similar results—differing only in degree.

It is in this way that the preparatory sections of the intermediate schools have large numbers of pupils, and yet it is not in these establishments that we have the highest quality of education. These sections are not the places where good educational methods are used, nor are they in the vanguard of progress. I mean that the education which is given there is one that continues in the homes, and demands less professional skill from the teacher than is demanded in the primary schools, and the instruction in itself has small educational value In these circumstances one might say the plethora is inversely proportional to true education. What at the moment is saving this retrograde schooling so often is the quality of the pupils and their social background.

Falling numbers in the schools also affects the moral training The intellectual mediocrity of the pupils is often accompanied by difficulties in adapting themselves to the school environment. The pupil who cannot follow his work is not interested in the lesson and disturbs it Often he himself accentuates his difficulty in adapting himself to his environment, and seeks to compensate for his intellectual inferiority outside the school The scout-troops are mostly made up of those who have been unadapted intellectually Present-day society actually offers many opportunities to less gifted children in the form of out-of-school activities.

In a recent inquiry into the leisure activities of pupils of a large school we found that some pupils—generally the less outstanding ones—participated in three, even four or five, out-of-school activities per week. Excess of variety is the great fault of the mediocre pupils. It is noticeable that in the classes of the bad pupils the traditional virtues linked with study, like punctuality, dexterity, intellectual honesty, attraction to beauty, etc., disappear, leaving the educator unarmed and confused, we shall say nothing of the loose habits that end by being introduced into the school, and from which the masters themselves in the long run do not remain immune.

If one now faces the chances of success of the preparatory sections of the intermediate schools and the depopulation of the working-class schools, one can see the dangerous evolution of primary education. This evolution, which is being accentuated in a dangerous way, is acting in such a manner that the popular schools are coming to be the least capable of forming the pupils for the fourth forms and further studies. The best pupils leave primary education at 12, and the popular school becomes one for the bad pupils, with the fatal consequences this involves. There is no room to recall the psychological studies on intelligence and language in order to explain the facts which empirical observation has stressed.

Briefly, in the first place a spurt of energy shakes the teaching

staff, and then in the second, the difficulties due to the decline in the school population increase, and the impossibility of victoriously fighting them causes fatigue and produces indifference. If these three examples are connected.

(1) the external influence of the population on educational innovations,
(2) the favourable result on education in the first stage; and
(3) the unfavourable result on education in the second stage of a decrease in the number of school children—

it will be agreed that demographical fluctuations have educational repercussions affecting the quality of public instruction

Conclusion

We have rapidly reviewed a few examples of the repercussions the demographical situation has on education. The consequences can be divided into those affecting the quantitative, and those affecting the qualitative aspect of the question.

Our incomplete analysis aims only at proving that scientific pedagogy must not only have a nominal interest in sociology, but must also take practical measures This proposition has two sides really scientific pedagogy is the fruit of an objective study of education, it also leads to a coherent and intelligent application of the theories arising from this objective study

Like any scientific discipline, education is essentially a science which depends on other sciences where the hypothesis of mutual influence must have a place [1] An educational phenomenon necessarily has many aspects, psychological, physiological, and sociological, which must be perceived concurrently if we are to avoid an incomplete representation of the facts.

As far as it is an applied discipline, the various aspects of education are measured by objective techniques As to the problem with which we were concerned here we may conclude

(1) that the demographical variations entail pedagogical repercussions,
(2) that there is little use in considering pedagogical solutions in the light of the demographical situation of the past,
(3) that it is, on the contrary, useful to adapt education to the present demographical situation, and
(4) that, in a far-sighted policy, it would be wise to take the demographical forecasts into account so as not to lead educational legislation towards artificial solutions which can have no meaning in the future.

S. De Coster.

[1] S De Coster, "La Pédagogie, Discipline de la Complémentarité" (*Revue des Sciences Pédagogiques*, April 1949)

CHAPTER FIVE

SWITZERLAND

It is extremely difficult to give an accurate and sufficiently full survey of the problems concerned with the trend of education and with secondary studies in Switzerland, and this for the following reasons Firstly it must be remembered that Switzerland is a confederation formed of twenty-five States which are all independent in the matter of public instruction, so much so that from one canton to another there is variation in educational organisation, in curriculum, and in methods, since these depend on local necessities or arise from a different historical evolution For instance, the connection between primary and secondary education is dealt with in very different ways in ten cantons and half-cantons, to enter upon secondary education attendance at the primary school until the age of 14, in three till 13, in seven till 11, in three till 10, and in one till 9 years of age is required or compulsory.

The nature of the consequent problems and the differing situation of pupils and parents are evident, for instance, in two neighbouring towns such as Geneva and Lausanne, for in Geneva Latin is begun at 12 and in Lausanne at 10 after only three years of primary education. This article is particularly concerned with the conditions existing in the canton of Geneva

The second reason is of a social nature When the evolution of education in the course of the last thirty years is examined, we note the enormous increase in the number of pupils taking secondary courses There is no doubt that the economic and social evolution of our time has brought in its train demands of a more exacting type with regard to professional training. To-day, those possibilities have disappeared, which formerly existed, for young people to carve out a brilliant career without secondary education Even fifty years ago, any intelligent man with the necessary force of character could rise. Such meteoric careers are becoming rarer and rarer, because now there is always the necessity of proving that special studies have been made, the standard of which must be attested by the diplomas demanded by employers, although these diplomas are not always a sure guarantee of knowledge and practical ability On the other hand, employees are organised and defend their interests To support their profession, they too are often opposed to the engagement of persons of ability if they have not been through the mill.

But we must take account not only of this aspect of the situation; there is first and foremost the future of the children and their parents' anxiety concerning it.

If the conditions of entry into the different professions and callings have become more difficult, their very diversity has created a liberty of choice which was formerly non-existent Since the evolution of ideas and manners parallel with the economic evolution, the general raising of standards of life and the positive results of compulsory education have created, whatever may be said, a certain desire for culture, a new phenomenon is present in every country It arises from the desire of an increasing number of parents to ensure for their children chances of a better start in life, on the one hand, and on the other, from the development of the feeling for social justice in education, from legitimate claims of the right to culture, a more equitable conception of the equality of the rights of citizens in a democracy leading to free secondary education—all these are cumulative causes resulting in an increasing entry of pupils for secondary education Though its effects are as yet unacknowledged this influx is producing a slow but inescapable transformation of the internal structure of our secondary schools I am anxious to emphasise this point, for it is in my opinion the cause of a problem, a problem which cannot be solved unless we collaborate with the psychologists and use their researches and methods of work. An underlying problem, unrecognised a quarter of a century ago, can no longer be evaded by secondary education that of the educational orientation of the children, for secondary education is more and more divided between two tasks which appear irreconcilable—to retain the school of culture which it has been through the centuries, and to be a learning-house, or better, a distribution centre, a function it has never desired or sought but which has been imposed by society and which it cannot ignore or fail to fulfil.

How has this evolution come about? We need not go very far back for the answer.

Until 1914 our land and its neighbours lived in a period of stability and equilibrium, remarkable when we think of the difficulties and anxieties of the time. Social and economic life was less complicated than is the case to-day the entry of children to trades and professions was easier. An intelligent, hard-working, resourceful child could, at the end of the compulsory education period, enter business or trade (i.e. at 12 or 13 years), a proceeding which is scarcely possible to-day We may give a single example with regard to trade in the near future no one will be able to set up on his own as a skilled master tradesman in Switzerland unless he possesses a federal diploma of competence which itself depends on an official certificate of completed apprenticeship.

The majority of parents used to know what they wished to do

with their children, the path was, so to speak, marked out A choice depending almost entirely on social considerations worked naturally without arousing those protests which to-day are usually justified Those whose parents had the means continued their studies even if they had not the necessary intellectual ability, together with a few gifted bursars This system, says Roger Gal, had an apparent wisdom " from the fact that everything, from his birth, prepared the child for his condition, the fact that he would remain in it, that he would inherit from his family and environment his manners, his ways of thinking, speaking, living, led him to accept them as natural Of his other possibilities, he was forever ignorant of them, he did not even suspect them." [1]

This structure of secondary education has remained, when the desire and possibility of pursuing it have continuously increased

The desire? How could we ignore the repercussions in the minds of the young, of all they see at the cinema, hear on the radio, read in the Press? The narrow limits of thought in which we lived as children have widened suddenly, in the heart of every boy and girl there is the call of life, a desire for expansion, an ambition For those whose dreams are absurd in face of real intelligence or will-power, how many know that nothing is obtained without effort, that they must study and must have the will to work? Now for those who do not know, parents, with their greater experience, try to tell them, to persuade them from the point of view of the educator, the pretensions of some parents with regard to their offspring has its profoundly moving side, to make of their son or their daughter someone who will be the equal of the very best On the other hand, in thickly populated areas a feeling of social justice in education has developed which has led to legitimate demands for the right to culture.

In a country like Switzerland these factors do not operate everywhere with the same intensity. In a number of our cantons, the parents know very early what they want to do with their children, whose life is, so to speak, marked out for them The choice according to social order, which was universal formerly, is still taken for granted in many parts and arouses none of the justified protests which one hears in the great centres of population. In Switzerland, there are many regions in which it is quite natural that the children of the well-to-do classes should continue their studies, a large number of children who will follow the occupations of their father, particularly among the peasants, finish or continue their studies in practical or technical schools. Everywhere where such a situation pertains, the problem of cultural equality to all intents and purposes does not exist It exists perhaps less in Switzerland than elsewhere because there are a number of manual callings

[1] Roger Gal, *L'Orientation Scolaire,* pp 10–11.

which secure for those who follow them relative independence, an income either equal to or above that of certain liberal careers. One has only to see certain agricultural estates in the plains and in the mountains to realise this.

In the great centres of population the problem assumes a quite particular seriousness. In Switzerland, as everywhere else, secondary education is little adapted to the new conditions which confront it—whereas formerly, when as a natural proceeding its pupils were already selected by their social standing, elimination occurred only in respect of children intellectually deficient, because the bulk of secondary school pupils was relatively homogeneous from the point of view of origin and possibilities. To-day, secondary education has to deal with masses of children of the most diverse social classes, and the enormous task devolving on the schools consists in determining the true aptitudes of each scholar and directing him to those studies for which his capacities fit him. A definite example will clarify the situation seventy-five years ago only 4 per cent of the secondary pupils in Geneva came from the primary schools, 96 per cent from middle-class private schools This porportion is to-day exactly reversed, since, in our canton, entrance to the secondary schools is not dependent on any examination but based on satisfactory results obtained in the primary schools. This tendency is so strong that it would be true to say that only children who are plainly mentally deficient do not go on to secondary education—the question is then to know in what way these children can be dealt with.

Education in Geneva is organised thus All children without exception attend the primary schools for six years. At 12 years of age those boys leave who wish to attend the *Collège de Genève* (*lycée*) to undertake secondary studies with Latin the next year (end of the seventh year, therefore) at 13 years the boys leave who want to do secondary work without Latin and all the girls going to secondary schools with or without Latin. In general, only those pupils who are incapable of higher education remain in the highest classes (eighth and ninth) of the primary schools. The children find passing from primary to secondary education extremely difficult—from their entry into the secondary school, they learn two languages, Latin and German. Also, whatever the school the simple class teacher is replaced by specialised masters—there is no doubt that this accumulation of difficulties is specially harmful for the children of the lower classes whose parents have had no higher education and who have no one at home of equal intelligence to help them or even to understand them; these children therefore start their secondary education under conditions infinitely more difficult than do the children of the upper classes. It is for this reason that twice in twenty years there have been plans, not yet brought to fruition, to institute a "cycle of orientation" of

two to three years between primary education and secondary education proper, during which the problems of examining the children's aptitudes would have a greater importance than that of the acquisition of knowledge.

This problem is very much graver in other cantons, when one takes into account, for example, that in the canton of Vaud families have to decide on the choice of secondary studies at the end of the third year of primary education (9 to 10 years), since Latin is learnt at the *Collège Classique* from 10 years of age onwards. The same situation exists at Basle. The canton of Zurich is at present trying to solve the problem by making admission to secondary education dependent on the joint judgment of both primary and secondary teachers.

At Geneva a recent solution, embodying a general principle, has been worked out, a few months ago the decision was taken to make secondary education free till the end of compulsory schooling, i e till 15 years of age. Excellent as this solution may seem, it appears to be ineffective and so is dangerous from several points of view Ineffective because education charges and school fees are relatively very small in Geneva and because, until now, those who could not afford them could easily obtain scholarships. Hence there is little change in the situation. Dangerous because this solution presents two major drawbacks a large number of parents, tempted by the advantage offered them, send their children to secondary classical schools without troubling to find out what their children's capacities are or for what such an education will fit them They act like the crowds who wish to consult doctors as soon as social legislation grants them a free medical service

In the second place, free secondary education cannot eliminate the difficulties of children who come from an environment ignorant of the exacting demands of higher studies. Free education will not make any difference to the fact that at home these children can have no library—no dictionaries, no works of reference—any more than they can enjoy an understanding and helpful atmosphere.

Other solutions must then be found. They could be found (if they were part of our system) in boarding schools, but that would present almost insoluble financial aid and moral problems They could also be found in a greater understanding between the different social classes, in the form of sponsoring and receiving working-class children in circles capable of initiating them into those interests which must henceforth be theirs Finally, they could be found—and this is probably both the best and the most easily worked solution—in the complete transformation of the climate of secondary education, by a modification of its internal structure, by adding, to its concern for pure instruction, a positive concern for education in the wider sense.

The increase in the number of pupils in secondary and higher

education is a phenomenon apparent in all countries. It will entail some day the taking of measures which, whether one wishes it or not, will limit individual liberty If the time were to come when everyone possessed maturity of mind, such maturity would no longer have any value or justification. It seems, then, that it is important, at the start and by the most objective means possible, to direct adolescents to that study or work for which they are fitted by their aptitudes and capacity for sustained effort. We cannot much longer be satisfied with the mere results of elimination, because these depend scientifically on too precarious a foundation, and socially they are in a large number of cases basically unjust.

I will not go into problems of set-up because they differ greatly from one country to another, but I think that there should be a universal imitation of what France is attempting now between primary and secondary education for children of 12 to 15, namely a period of orientation postponing as long as possible the taking of final decisions.

This period of orientation should enable us to take stock of children not only from the point of view of their intellectual abilities—to which we too often confine ourselves—but from the point of view which the present school conditions do not reveal practical intelligence, manual ability, aesthetic aptitudes, character, etc

To prepare the way for eventual changes it will doubtless interest the reader to hear of the experiment which has been in progress at Geneva for the last two years.

Since 1946 all the primary school children of an age-group are required to pass that year or the year after into the secondary school That is, all children—boys and girls in the sixth year (11–12) as well as those of the year below—have taken four series of tests a group of scholastic tests and a group of psychological tests The scholastic tests have dealt with arithmetic, French, general information and history, the psychological group have consisted of a battery of about ten tests. These tests have been carried out for three years in succession, each time with children coming into the classes concerned, but also each time taken by the children previously examined. This year, for instance, these tests have been taken by all children, whatever their school, of the ages of 12, 13, 14, and 15 years. The tests, composed with great care, and analysed with equal care, have led to a general classification of all children of a specified age, and at the end of the school year the parents have received, and will do so in future, a document headed

TO THE PARENTS OF SIXTH-YEAR PUPILS—BOYS, AND TO THE PARENTS OF SEVENTH-YEAR PUPILS—GIRLS

Results of the Orientation Tests

In the series of psychological tests done by the pupils, some give greater evidence of certain literary aptitudes (which we call Series A),

others greater evidence of aptitudes of a scientific or technical nature (which we call Series B)

PUPIL Name, Christian name Class:

For the combined tests (Total 100)
For Series A tests (Total 100)
For Series B tests (Total 100)

The results can be interpreted as follows

If the pupil is placed in the first quarter of children of his age (from first to twenty-fifth file) for the *combined test,* he can follow his tastes and will probably not have any difficulty in undertaking either classical or scientific secondary studies

If he is not among the first twenty-five, but placed in the second quarter (26 to 50) in *Series A* tests, he shows a taste for literary studies

On the other hand, if he is placed in the 26 to 50 places of *Series B,* he shows taste for scientific or technical studies

Geneva, June 1948 DEPARTMENT OF PUBLIC INSTRUCTION.

Thus the results which we communicate to parents eliminate the disturbing factors in classifications based on the composition of such and such a class or on the personal impressions of masters concerned There is thus in the estimate of the children's ability an attempt at objectivity, of which specialists in these matters can appreciate the importance It is evident, however, that we are dealing with an experiment of which the time results are of a long-term nature We can affirm that children coming from rural classes composed of pupils of different ages receive an education equal in quality to those of the graded classes in towns

Systematically examined in the laboratory of experimental education of the Institute of Educational Sciences, these tests make it possible to have for each pupil an index of attainments and aptitudes, on which, year after year, will be entered the results obtained through their various scholastic stages.

It will perhaps be possible in a few years' time to state that such and such a test does give at the beginning of secondary education exact indications of the intellectual ability of a child, although no doubt there will always remain variations in his behaviour, perseverance, and effort These tests—and this can already be stated—will also rapidly reveal that certain topics in the curriculum are obviously beyond the capacity of children of a specified age to understand and assimilate and that consequently an exhaustive examination of the subjects of the curriculum must be undertaken

It may be objected that this is all very well but is really what the French call " music of the future "

What is the present situation of poor children whose intellectual capacity is undeniable? Can they undertake higher studies? It is now necessary to say something about the *Fondation pour l'Avenir* [1], of which the sub-title explains the purpose For social

[1] Foundation for the Future.

justice in education and for the consideration of another problem of which the social importance must be recognised: that of the education of an élite and the consequent intellectual, social, moral, and political impoverishment of the lowest social classes by the passing of their best elements into higher social categories.

At the end of the First World War a group of prominent Genevan citizens, shocked by the situation in our country, inaugurated a Foundation for Social Justice in Education (1920) The object was to obtain for intelligent children of parents without means the wherewithal to undertake studies suited to their capacity and their tastes, by giving the necessary financial help to these children and to their families. Candidates are presented each year to the Council of the Foundation by primary teachers who have noted their unusual ability or by their parents or anyone else These children are examined by various commissions with regard to their scholastic knowledge and their out-of-school knowledge, as well as for their mental capacity. The help given them is fixed in such cases according to the family means It is not merely a question of children who will pass on to the university, but also of those who will receive the opportunity to pursue the occupations best suited to their aptitudes

In the course of its thirty years' existence, the *Fondation pour l'Avenir* has thus been able to help a large number of deserving children and adolescents (about four hundred). In 94 per cent of these cases, its proposed aims have been reached, in 6 per cent. the Foundation has had to acknowledge that its judgment was mistaken or that qualities of character were not sufficiently strong in the case of certain beneficiaries.

With regard to their distribution 20 per cent. have become teachers, about 50 per cent have entered various employments, 8 per cent have become artists. In fact, the number of really "supernormal" children which it was hoped to discover has been shown to be extremely small.

I may add that as well as financial assistance, even more effective help of a different kind is given to all bursars, as each is placed under the authority of a guardian who follows his career and gives him as much advice and help as possible

Here, then, we have an effort due to private initiative, which also receives State financial aid, to improve the usual conditions of holding a scholarship by making a much more exact inquiry into the candidate's abilities, and then by nurturing him in an atmosphere of understanding and help which is all the more necessary since the child's natural environment is often ignorant and unsympathetic This leads me to face a quite different aspect, perhaps the most important aspect of the problem

In considering the social aspect of these matters, the following question obtrudes itself. is it the right thing suddenly to remove

these gifted children from the social class in which they have lived so that they may have access to the activities and interests of classes different from their own? Is there not a risk of causing a greater "proletarisation" of the lower classes, if we remove those members who might well contribute to raising their intellectual and social level?

Can one be certain that those who rise in the social scale, thanks to help from the community, will sufficiently bear in mind their modest origin to become the champions of the social group they have left, or will they, on the contrary, quickly reveal ingratitude and embarrassment at any reference to their origin? We have here a personal and human problem of extreme complexity. If scientific studies of character were more advanced it would be suitable to take into account as a principal element in selection the deep-seated tendencies of the individual The rise may be considered socially successful for all those who remain grateful to the community which has given them the opportunity but who also continue to believe that their first duty is not to forget the class from which they come

With regard to the general situation in Switzerland, I think it is possible to state that the political stability which is characteristic of us, the balance and equilibrium of our people, are largely the result of an educational and social system which has tended during the past century to give the different social classes, of which the country is made up, the consciousness of their own value. The Swiss peasant is an educated man, not only has he attended the primary school but often the secondary school, and we have fine professional schools which enable even a peasant of modest means to give his children a general and professional education which makes them feel the equal of other classes One example only, the number of Swiss peasants in our militia who have reached very high rank Is it necessary to recall that before devoting his whole time to the army, General Guisan managed his own agricultural estate?

The Swiss workman, on his side also, enjoys very advanced instruction since in nearly all our cantons full-time education is compulsory till 15 or 16 and part-time till 19. Numerous other opportunities are open to him. To ensure his professional future, he is encouraged to prepare for the examinations on completion of apprenticeship, and then for masterman. Swiss industry owes its continuance to the perfection of its production, which in turn demands highly qualified workers The Swiss artisan, like the peasant, is conscious of his attainment and his social importance. Very often, also, his wages are equal to the pay of higher black-coated workers, even of members of the teaching profession. Hence we do not see or see little of the large numbers forsaking manual work and the invasion of liberal careers which is taking place else-

where—nevertheless, sooner or later, as in all other lands, politicians and educators must solve the most difficult educational problem of the present age to ensure under conditions of the greatest objectivity and security the distribution of workers in the different types of employment and consequently in the different types of education which lead to all the professions. In short, to investigate as speedily as possible the means of abandoning the prevailing system of social and educational selection in order to substitute a system of orientation based on aptitudes and qualities of character.

R DOTTRENS.

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CHAPTER SIX

THE SCANDINAVIAN COUNTRIES

THE school systems of the Scandinavian countries, although they vary greatly, all agree on the principle of compulsory school attendance for a minimum period of seven years After this children are allowed complete freedom of choice to follow what further study or career appeals to them. This liberal view on equality of educational opportunity has survived, in spite of the fact that the prestige given to the belief in the advantages derived from free economic competition is rapidly dying out. Planned economy and far-seeing budgets as regards employment—striking political traits in all Scandinavian countries—have not restricted choice of occupation to any marked extent Men are chosen to be leaders or to hold posts of great responsibility, not because of titles or connections, but on account of their ability.

Of course, this is only true in theory In practice there are many obstacles and restrictions Firstly, scholarships are not adequate to compensate for the differences existing between the social classes from an economic point of view. The majority of students who embark on a long and expensive university training come from the upper classes, whereas students from the lower classes choose a course of training which is both short and cheap Only during a period of great unemployment do the universities recruit their students from the poorer classes Even so, it is in this sphere that a democratic school training has shown the greatest results. A greater obstacle is the geographical factor. The scattered population in rural districts, especially in Sweden and Norway, has not nearly the same educational facilities as the inhabitants of large towns, e g in Oslo, where 15 per cent of the total population of Norway live, 43 per cent of the students at the university come from that city or the surrounding districts It is impossible to have a secondary school in every village; in Sweden only 30 per cent. of the population live in cities with gymnasiums, and more than 40 per cent. cannot keep their children at home if they wish them to have a secondary school education. Boarding schools are not popular, because they are too expensive, and it is very difficult to provide enough new schools and sufficient teachers for the increasing numbers of school children. The question of race discrimination hardly arises in the Scandinavian countries. In fact, anti-Semitism is probably less pronounced in Scandinavia than

elsewhere. The Laplanders are handicapped by their language, but as numerically they are very few, they are being rapidly absorbed by the Scandinavians. Last, but not least, is a psychological obstacle, which cannot be estimated exactly, but which should not be underrated. It is the attitude of many working-class parents, who regard the secondary schools with hostility, as a device employed by the upper classes to deprive the people of their leaders. It is surprising to remark—e.g. in Denmark, where no economic difficulties prevent the recruitment of pupils to the secondary schools—the low percentage in them of children from the working classes compared with the proportion they form of the population.

Indeed, as the standard of living of the working classes is so much higher than before, the position of the secondary school as an élite establishment for the upper classes is no longer tenable. It is estimated that in 1970 more than two million of the seven million inhabitants of Sweden will have passed the "real school examination" or have continued with further education. During the last ten years there has been an immense influx of pupils into the secondary schools. The comprehensive school system has greatly increased the number of pupils, and most towns have been very ready to provide schools. Secondary schools which offer a general education are cheaper to run, have older traditions than vocational schools and therefore are more numerous. The drift of the population towards the town—"escape from the country"—has provided more facilities for schooling The growing democratic character of family life has given children far greater possibilities of choosing their education themselves. In a family of ten children—which was quite usual several generations ago—none of them had the opportunity of further education. Now most families living in towns have two children, some less, and all the children have the opportunity of secondary education. The great specialisation required in a modern industrial society demands longer training and more knowledge than formerly. The growth of mechanisation in long-established industries, agriculture, forestry, and fishing, means that fewer people are employed, but with higher qualifications and better training. On the other hand, in the case of modern industries and administration, more experts and a larger staff of administrative workers are required. On account of the low birth-rate during the years round about 1930, there is a scarcity of candidates for all vocational jobs. Young people are able to choose whatever job they prefer. Married women are urged to take jobs—full- or part-time—whereas some years ago there existed such a strong prejudice against employment of women who had other means of support, that a claim was sought to prohibit the employment of married women. The feminist movement has gained a complete victory· theoretically there is no

obstacle to prevent a woman choosing any career—even the Church Women can also enter certain branches of the army, e.g. the liaison service.

The structure of society has demanded a better-equipped personnel. The dark prophecies of "academic proletariate" and "who will undertake the menial tasks?" have not been fulfilled. Housemaids have almost disappeared, but they are replaced by nursery teachers, social advisers, substitutes for housewives (in case of illness, etc), and so on. Swedish statistics show that in 1913 6·3 per cent. of the employees in industry occupied administrative posts, and in 1943 there were three times as many. In 1870 5 2 per cent of the Swedish population were engaged in commerce and transport In 1940, 19 5 per cent. of the population had jobs in these employments.

Consequently, the technical schools have developed rapidly. The output of a woodworker, for example, after a short course instruction, increases by more than 20 per cent. In the old days occupations were not "chosen", but inherited. The apprentices then had the great advantage of an early introduction to their trade and its traditions, and soon gained knowledge and experience To-day the apprentice system is replaced by the school. Unfortunately technical schools (with the exception of the mercantile ones) are expensive in comparison with schools offering a general course, and for this reason local councils have not been ready to provide new and well-equipped technical schools. It is clear, however, that the time is past when the newsboy had the chance of becoming a multimillionaire Most important business men are not "self-made", but have inherited their firms, with the capital and the goodwill. Inventions are not made by isolated geniuses but as a result of teamwork in laboratories financed by firms which stand to make the greatest gains In agriculture, commerce, and shipping the demand for better-trained employees regulates recruitment and choice of career.

Broadly speaking, there are only three careers now in which the highest positions in society can be reached with only a primary school education.

(1) *The Arts and Literature.* In previous centuries all famous writers in Scandinavian countries were university men. A generation or two ago the "proletarian poets" made their appearance in the Parnassian circle—partly due to the growth of the reading public. In recent years once more good literary authors have continued their studies above primary school standard. This is significant of the present increase in secondary education, and the same thing is occurring among musicians, painters, actors, sculptors, etc. Journalists were often recruited from typographers (or trade-union leaders for papers backed by the Labour Party), but now the benefit of giving them a university training is seen. In their

case it is justified, but it is questionable whether painters and other artists should follow this training. Talent and genius must be able to follow their inclinations.

(ii) *The Trade-union Leaders.* These must have the confidence of their electors, and therefore should be acquainted with the living conditions of working men and women.

(iii) *Politics.* A result of universal suffrage is that a parliamentary career is no longer the monopoly of university men. Through the introduction of the parliamentary system and the fact that the Labour Party holds office in all Scandinavian countries, the ministries have taken on a more democratic nature The Ministers of Justice, however, have always held a lawyer's qualifications, but some Prime Ministers of the Labour Party have had no education apart from their primary school and participation in politics. On the other hand, the Quisling Government in Norway during the German occupation in 1940–5 had as ministers only university men This is chiefly explained by the claim of the Germans that members of their puppet governments in occupied countries should have a perfect knowledge of German.

A very remarkable fact is the predominance of primary school teachers as members of Parliament they have, in many respects, replaced the lawyers as professional politicians The teachers' training colleges and the people's high schools have been the training grounds of the political leaders of the people, particularly of the peasants.

Both in Sweden and in Norway (less so in Denmark) it has become a tradition that high civil administration posts are given to retiring ministers and members of Parliament. Thus county sheriffs and mayors of great cities are often politicians with no other qualifications than their political reputation They may be very successful in these jobs, where they are frequently called upon to act as representatives and need a sound knowledge of politics. Certainly there are also dangers in making such appointments a reward for political success The examinations for the Government service are an assurance against corruption and nepotism in political life

Recruitment of Teachers

The teachers' training colleges have been the cheapest and quickest method for young people from rural districts to gain sufficient knowledge to enable them to become leaders in their home communities. Now the comprehensive school system requires a much longer training for a teacher. Many teachers now hold the view that matriculation is a suitable entrance examination to the training colleges.

A very interesting paper has recently been published in Norway, showing the great difference between the candidates coming from

training colleges and those from primary schools with little further education. In the first group, 58 per cent. came from rural districts, in the second group 90 per cent. were children from peasant families (70 per cent. of the total population inhabit country districts) Women predominate among the candidates from urban areas Families living in towns who can afford to let their children continue their studies send their sons to a university, but advise their daughters to choose training colleges to ensure them a fixed employment with a right to a pension.

The social prestige of a teaching career varies enormously among the different social classes and in different parts of the country This is shown by the fact that neither the very wealthy families, nor the poorest, send their children to training colleges. Candidates for the teaching profession are very seldom sons or daughters of men engaged in commerce or shipping two-thirds of them are children of teachers and peasants, from the less-productive areas

Overcrowded Studies

Owing to the rapid rise in the standard of living and the increased opportunities in education, there is keen competition to study medicine, dentistry science, veterinary science, or to follow a technical training Candidates applying to follow a course in these subjects at colleges have to be rejected, not because of overcrowding in these professions—there is a shortage of doctors and dentists in outlying parts—but through lack of adequate training facilities.

It is difficult to find a fair method of selection. The easiest has been to judge by examination results, but this has meant desperate competition to gain the highest marks in the matriculation examination, which has proved detrimental to the real aims of education. Pupils have been spurred on to immense efforts in their particular subjects at the cost of their general culture. Moreover, there is no certainty that matriculation results are the right tests of the pupil's ability, and, although many committees have worked on the problem of the method of selecting candidates, no reforms have been made.

These careers appeal to young men and women not only because they will obtain well-paid posts, but because by admission to the colleges to study these subjects they will gain honour and prestige. Many who are clever and ambitious prefer to follow these careers, even if their qualifications are more suited to other jobs.

School children show very similar tastes in their choice of careers. From 4 to 5 years old they fancy becoming shopkeepers, bus drivers, policemen, or doctors—people they see every day. At 10 years old they are influenced by the cinema, illustrated magazines, and books, and long to be air pilots, naval officers, discoverers, inventors, jockeys, detectives, diplomats, film stars, nurses, mis-

sionaries, etc. Usually it is with the onset of puberty that a more realistic approach to some fixed career occurs, and the occupations of the children's relatives and friends are discussed, and their financial and social status Girls mature earlier than boys, and it is difficult to give vocational guidance to boys under 15, although long after 14 many girls and boys change their minds frequently, and it may be a mere accident that they take the job most suited to them first.

Investigating the jobs held by six hundred men and women in Stockholm, ages 16, 20, and 24, it was found that 50 per cent. had quite different jobs from their original choice In one Swedish town 27·5 per cent. of the youth had no fixed plans, 35 per cent had found jobs they wanted, while only 7 per cent were influenced by their teachers' advice in choosing a job.

The replies of Swedish pupils, when they were asked why a particular job appealed to them, were·

(1) Interested and attracted by the job
(2) The salary.
(3) Chances of promotion in the future.
(4) The parents' example.

The boys were more realistic than the girls in their wishes, but few considered the importance of suitable qualifications, living conditions, pensions, etc.

Mass suggestion is very strong among the teen-agers. Most girls want to be hairdressers, while most boys fancy a technical job, especially to do with aeroplanes and cars. The story of a technical school in Stockholm which in vain advertised classes for "metalworkers" is very significant The headmaster hit upon the scheme of calling them "classes for air mechanics", and at once the classes were overcrowded.

Occupational Guidance

This is not at all satisfactory from the people's viewpoint. For this reason a comprehensive system of occupational orientation exists in all Scandinavian countries, organised by the authorities concerned with employment, in collaboration with the schools and psychologists. All pupils in the top class of the primary schools write a paper on their future plans, fill in a questionnaire, and the school medical examination gives some help. All this, however, gives only superficial and somewhat unreliable information. Many boys and girls are unaware of their real desires and defects, and so ought always to be interviewed. Special "liaison men" are trained for this job, and are delegated to posts throughout the country. Information is collected about all types of jobs and published in booklet form. These must be available in all towns

for use in schools, while pamphlets on vocational guidance, educational opportunities, and grants are distributed among the pupils. The most effective and instructive aid has been the showing of films of different vocational schools.

It is too early to judge the effects of this new kind of social-welfare policy. It is easier to give warnings against taking up certain jobs on account of physical or psychological defects than to give positive advice to choose one particular job. Prognoses are unsure, owing to the changing temperament of the individual and the changing needs of society. Nevertheless, the importance of negative guidance must not be underrated, in Copenhagen 10 per cent of the applicants are persuaded not to take certain jobs because they are unsuited for them For some jobs, e g drivers, watchmakers, jewellers, etc, psychotechnical tests may be useful, but selection of applicants for the liberal professions is more complicated, because here personality and character play a more important part, and perseverance and interest vary greatly. Temperament tests have been used in Scandinavian countries only experimentally.

New Ways of Admission

Cumulative records have been discussed but not officially introduced in the ordinary schools. School reformers tend to replace the old matriculation certificate by a "psychogram", which demands case-studies, systematic observation of the behaviour and reactions of the pupils, and extra-curricular activities, and emphasises the true educational aspect of teaching. This method is opposed on the grounds that it is not objective. It is not decided what value should be placed upon intelligence tests; originally educational reformers stated that for entrance to a gymnasium an I Q of 115 was necessary, but now it is thought that the child's I Q varies according to its social background. The results of intelligence tests given to army conscripts show that the mental capacity of the population is not nearly being used to the full. Young men with only a primary school education may have a higher I.Q than university students, but the average I Q of inhabitants of large towns (especially the capital) is higher than that of people living in rural districts—though naturally that depends on the content of the tests and the conditions of testing. Many jobs demand a knowledge of the habits and customs of the working classes, so it would be unfair to prevent the children of these classes taking such jobs. Therefore many different tests are used, and a special committee makes appointments, awarding them not merely on the highest marks obtained in the tests.

The psychological examination for all candidates seeking to become officers in the Swedish (and Norwegian) army is a good example. The tests consist of:

(1) written group tests

(*a*) life-history;

(*b*) attitude schedule,

(*c*) a questionnaire of introversion-extroversion and neurotic tendencies (sensitiveness to social stimuli);

(*d*) a test of simultaneous capacity (doing three jobs at the same time);

(*e*) a so-called working test (continuous work on the same job for one hour, which registers in the form of a "working curve"),

(*f*) a so-called situation-test (descriptions of situations for which alternative courses of action are given and from which the candidate has to choose the best and the worst),

(*g*) a general intelligence test;

(*h*) a group of technical tests.

The time allowed for these tests is five and a half hours.

(2) A practical technical test which is carried out at three or four "stations". Great importance is attached to the characterological observation. Time allowed is about twenty minutes.

(3) An interview lasting about an hour with each candidate, which is conducted by professional psychologists or psychiatrists who have previously had an opportunity of studying both written tests and protocols of the practical-technical tests.

(4) Meeting of the examiners, among whom each case is discussed. Whoever has conducted the interview has written down a so-called *résumé* of character for each man, which is transferred to a special pupil's card. The selection board includes both professional psychologists and psychiatrists.

It is characteristic that this example is taken from the army. Probably no other branch has tried so methodically to give a recruit the job best fitted for him The army psychological departments have experts for interviewing and testing, the air force and the police also favour this method of selection The social background of an applicant, his attitude towards his fellows, his reaction speed, etc., count more than the examination marks.

Some professors recommend the same method of selection for medical students, but as the university courses demand a certain amount of general knowledge and reading, the secondary school certificate may give valuable indications of the suitability of candidates for the liberal professions The result of the discussion will probably be a synthesis of both methods. The greatest problem lies in the effect of selection on the colleges and courses which are not so popular, because the standard of students in law, theology, mathematics, and science will be low if the other faculties—on account of the numerous applications—are able to pick the best candidates It is not decided whether dentists, chemists, etc., are of a greater benefit to society than teachers, scientists, lawyers, etc.

One notices how little the élite of the students contribute to politics and culture; they appear too absorbed by their studies to take a part in social affairs Another drawback to the tests is the effect of preparation for them. Many institutes use a combination of school certificate, self-description, and practical tests, e g. the institutes for social welfare, nursery schools, and the selection of vocational guides.

The School and the Choice of Career

Formerly the school curriculum gave little guidance on this point, but the democratic trend has introduced better courses in social science than before Classes in civics—which are compulsory in continuation schools, are taught about distribution of labour, unemployment, seasonal work, piece-work, collective contracts, apprenticeships, etc Extra-curricular activities, which are popular in city schools, should include visits to factories and vocational schools Holidays might be spent working on the land, so young people might become interested in agriculture, which at present suffers from shortage of labour, probably because the work is considered more tedious than that in towns

It is too soon to judge the effects of this new function of the school· teachers shirk the responsibility and fear conflicts with ambitious parents To this day all prognoses of the need of recruiting for certain jobs have been incorrect, due to the abnormal post-war conditions, and the rapid rise in the birth-rate. All teachers, however, are convinced that a complete education should include help in finding the "right" job for the child. Naturally some psychopaths will never be satisfied with their circumstances Society is not a machine, and its development is difficult to predict The problem of the surplus of highly specialised applicants for certain jobs cannot be solved unless the varying abilities of candidates are systematically and scientifically used in different occupations.

OLAV SUNDET.

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CHAPTER SEVEN

CZECHOSLOVAKIA

THE purpose of every school system is not only to give education and instruction to the new generation, but also to act as a selective agency for occupational distribution and for all grades of leadership. This feature of school organisation is very important, because the efficiency of the nation depends largely on its results. In spite of that, the educators in most countries who are involved in the social process of selecting boys and girls for different life-roles are not fully conscious of the existence of this factor. Their contribution to the selective process is largely instrumental. It is the economic and political structure of the society as a whole which decides the aims of this selection and the methods by which it is achieved. The ruling class decides for the kind of school system which best suits its interests. This basic fact is camouflaged by idealistic phrases about "the equality of opportunity for all", "the sacred right of the family concerning education" (General de Castelnau), or "the freedom of the parents and of the child to pick out the school and teacher."

One does not have to be a Marxist to verify the foregoing statement. A strict scientific study of present school systems all over the world reveals this universal characteristic of a selective process which favours the intentions of the governing political force. The progress of any school system is limited by the extent to which power is divided among classes in the country concerned. We might call this verifiable fact a law of social gravitation which is analogous to the physical law. Every physical body is endowed with a tendency to perpetual motion along a straight line, no matter whether it be the sun, the earth, the moon, or a piece of stone. The interaction of the forces, each on every other, produces in each body the resulting deviation of its motion from the straight line, and determines the form of its orbit. The mutual influence of the social forces in each nation works in a similar way so that each school system is modified by antagonistic forces into the form which it finally takes.

It is the task of comparative education to reveal general laws shaping organisation, programmes, content of instruction, educational trends, and even teaching methods. The material for the

study of educational laws is supplied by the horizontal approach, i e. by the comparison of the main contemporary school systems, and also by the vertical approach, i.e. by the examination of educational policies as they supersede one another in the same country. Czechoslovakia can serve as a typical example for the latter approach. It has gone through very different systems of government in the last fifty years. It is important for comparative education to examine the way in which each political change has shaped educational conceptions and school organisation.

I. Governmental and Educational Changes in Czechoslovakia

(1) The present Czechoslovak Republic was a part of the old federal *Austrian Monarchy.* The Czech lands (Bohemia, Moravia, and Silesia) never gave up their historic state rights, and they always retained their titles, their king, margrave, and duke, their parliaments, their emblems, and some remnants of their self-government. Slovakia was an integral part of Hungary The western part of the monarchy, Austria, was much more industrialised, free, and democratic than the eastern part, Hungary, which remained largely agricultural, autocratic, and indeed feudal right up to 1944.

In the late sixties of the last century, Austria became a democratic monarchy the structure of which resembled that of the British Empire. The new political policy needed a new plan for the school system The Education Act of 1869 was a progressive, model law, marking the victory of the rising bourgeois class over decaying feudalism The state took over the control of schools through democratic schoolboards and state (imperial-royal) inspectors. There was an end to the domination of the school by the church and of the teacher by the priest Austrian schools were no longer denominational (Catholic) They became "simultaneous", which meant that, in the same schools, children of whatever denomination were taught together for all subjects except religious instruction, which was obligatory and denominational. Compulsory education between the ages of 6 and 14 was introduced and enforced.

The new system secured a process of selection which was distinctly in the interest of the bourgeoisie It is true that all children up to 11 went to the same school. In this respect the Austrian system was much more democratic than the German, French, and English, as a comprehensive, common school (*école unique*) for all children without discrimination in regard to sex, social status, religion, or any other form of differentiation, was provided for up to that age. At 11, however, children's future social roles were predetermined. The last three grades of the elementary school prepared children for unskilled and semi-skilled labour. The

newly founded "bourgeois school" (*Burgerschule*) for children from 11 to 14 gave a practical preparation for trade, commerce, and skilled labour. The "realistic" school (technical, *Realschule*) from 11 to 18 selected boys for higher industrial and commercial occupations. The *Gymnasium* (from 11 to 19) was reserved for the élite of the nation, it was purely theoretical, with Latin, Greek, and mathematics as fundamental subjects.

(2) On October 28th, 1918, Czechoslovakia became an independent liberal democracy. The character of the new state was expressed in the Preamble to the Constitution

> We, the Czechoslovak nation, having the intention to strengthen the perfect unity of the nation, to introduce just measures in the Republic, to secure a peaceful development of our Czechoslovak homeland, to support the general welfare of all citizens of this country and to ensure the blessing of freedom to the following generations, have accepted in our National Assembly of February 29th, 1920, a Constitution for the Czechoslovak Republic the text of which follows

Masaryk's Republic tried to keep the promise expressed in the Constitution "to join the society of nations as a civilised, peaceful, democratic and progressive member". Its inner structure, however, did not differ radically from that of its predecessor. It was a very progressive bourgeois state. This is why Czechoslovakia did not find it necessary to change its school system and kept the admirable Austrian school law of 1869 with slight adaptations in the "small" Education Act of 1922. The endeavour of the teachers' organisations to prolong the comprehensive schooling of all children up to the age of 15 was in vain. Some important changes were won the curriculum of the people's junior high school (corresponding to the English senior school and French *école primaire supérieure*) was almost the same as that of the secondary schools up to the age of 13, and for the remaining two years, also, the curricula of the two types of school had some features in common Very liberal provision was made for the transfer of pupils from the people's junior high school to the secondary school. Latin was postponed to the third grade of the *Gymnasium* and *Real-gymnasium* in order to delay to the age of 13 the decision in favour of a technical or a humanistic life-career. The *Obchanska shkola* (senior school) was declared obligatory for all children who did not attend the secondary school. However, the class process of selection at 11 years of age remained The eight-year elementary school for children between 11 and 15 was attended in 1927 by 42 per cent. of children in Bohemia (18 3 per cent. in Czechoslovakia as a whole); the three- or four-year *Obchanska shkola* by 52 per cent. in Bohemia (36 4 per cent. in Czechoslovakia), and the secondary schools of different types by only 6 per cent. in the most industrial part of the

TABLE I

CZECHOSLOVAK POPULATION ACCORDING TO OCCUPATIONS AND STANDING IN OCCUPATIONS IN 1930

Type of Occupation	*Rentiers*	*Officials*	*Lower Employees*	*Workers*	*Helping Family Members*	*Unoccupied Family Members*	*Servants*	*Total*	*Percentage of the Population*
Agriculture	886,997	12,846	23,134	749,887	1,001,769	2,411,417	15,564	5,101,614	34 6
Industry and trade	312,400	118,241	117,123	1,953,880	22,458	2,573,289	49,546	5,146,937	34 9
Commerce and banking	209,384	83,775	129,823	92,468	43,683	472,791	62,145	1,094,063	7 4
Transport	15,764	57,915	119,264	96,430	779	518,048	6,268	814,468	5 5
Public service professions	29,108	193,376	87,783	26,214	722	338,538	40,100	715,841	4 9
Army	—	9,517	10,466	144,063	2	27,693	1,722	193,463	1 3
Personal service	13,594	205	1,324	117,725	920	49,249	797	183,814	—
Other occupations	823,621	16	380	897	1,246	418,766	27,245	1,272,171	11 3
No occupation, no data	90	—	—	99,680	19	107,306	70	207,165	—
TOTAL . .	2,290,958	475,891	489,297	3,281,238	1,071,598	6,917,097	203,457	14,729,536	100 0

country (5·3 per cent in Czechoslovakia) This system of selection corresponded roughly to the occupational distribution of the country, as shown in Tables I and II

In the statistical data presented in Table I there is no distinction between skilled and unskilled labour. We can only estimate that a large proportion of the workers in agriculture and in industry acquired the practical knowledge of their methods of work by experience or short preparation It is very probable that the majority of the village population sent their children to the elementary school up to the end of compulsory education. As a rule members of the urban working class sent their children to the *Obchanska shkola* This rough estimate was confirmed whenever submitted to investigation.

Readers in the university of Prague Drs Dolezal and Ullrich ascertained (in 1936) the social status of 86 per cent of all higher secondary school graduates in Bohemia and Moravia They tried to correlate the number of graduates with each ten thousand persons of different social standing employed in the chief types of occupation, as shown in Table II The most remarkable proof of the pronounced class character of the selection is the fact that there were thirty-two times more grammar school graduates from the class of "officials" than from that of workers (in the proportion 128 4)

TABLE II

PERCENTAGE OF 3,411 CZECH GRAMMAR SCHOOL GRADUATES PER 10,000 PERSONS OF DIFFERENT OCCUPATIONAL AND SOCIAL GROUPS

(According to Drs Jan Dolezal and Zdenek Ullrich, 1936)

Occupation	*Social Class*				*Total*
	Owners and Rentiers	*Officials*	*Lower Employees*	*Workers*	
Agriculture	9 6	104 0	10 6	0 5	8 0
Trade and industry	22 3	61 3	13 8	5 0	11 5
Commerce and banking	23 7	80 3	18 8	5 7	26 6
Transport	9 1	142 6	35 6	3 3	48 8
Public service, professions, and army	75 7	171 3	40 7	—	107 9
Personal service, etc	9 3	—	58 3	4 4	8 9
TOTAL .	12 9	128 1	25 3	3 9	16 7

These data illustrate clearly the fact that in the "first" Czechoslovak Republic the occupational distribution corresponded with

different types of school preparation given to children of different social strata. Class selection through the school system seems to be inherent in all liberal democracies.

The intention to relate access to secondary schooling to the economic and social status of the parents is made apparent by the fact that fees were required in these schools, while children of the same age did not pay any tuition fees when they attended either the elementary school or the *Obchanska shkola.* Tuition fees in *Gymnasia* were introduced by the Austrian emperor Joseph II on April 26th, 1774, with the purpose of excluding from secondary schools the children of the poor This policy was followed in Austria until the destruction of the empire, although its interpretation became very liberal, successful children of poor and middle-class parents were exempted from paying the fees. Czechoslovak school administration took over this policy for the first four years. Later on (after 1922) tuition fees in secondary schools were divided into five classes according to income, and varied from 100 to 1,200 crowns a year. Children whose parents had an income of not more than 20,000 crowns a year were exempted from paying the fees without regard to their success in studies. As soon as the post-war radicalism passed away, Czechoslovakia went back to the old Austrian policy in this matter

(3) During the occupation (from March 14th, 1939 to May 9th, 1945) the German authorities declared as selective schools even the senior schools (renamed *Hauptschulen*). Only 35 per cent of children of 11 years of age were allowed to enter the "people's university", as the Czechs used to call the *Obchanska shkola.* The number of secondary schools was cut from 159 to 118, and the number of students from 95,164 in 1938 to 42,838 in 1943. The selection was both nationalistic and social. The German *Fuhrer* K H. Frank is alleged to have declared that five years of elementary schooling would suffice for the Czech population after the war. Whether this saying is authentic or not, it characterises in short and pregnant form the national-socialist view of the relation of educational to occupational distribution for the non-German population of the "Third Reich".

(4) On May 9th, 1945, the population of Prague gave an enthusiastic welcome to the Red Army. This date inaugurated a new and deep change in the economic, social, political, and cultural life of the country. Czechoslovakia became a people's democracy. This form of government is based on the principle of the rule of the people by the people working in factories, fields, offices, and other kinds of constructive work. "The people are the only source of power in the state", says the first article of the Constitution of May 9th, 1948. The general characteristic of this new kind of democracy is given in the Preamble to the Constitution, as follows

We shall endeavour to make our state one in which all economy serves the people and which is conducted in such a way that general welfare will increase, that there will be no crises, and that the national income will be justly divided In this way we shall endeavour to attain the social order in which the exploitation of man by man will be entirely removed—socialism.

In a country where 95 per cent. of industry has been nationalised, where it is possible to plan production and consumption for the benefit of the country, and where a new moral atmosphere has been created, a radically new relation between education and occupational distribution has become self-evident. The following table reveals that class selection, supported by the traditional school system, prevailed in the country even after great political changes.

TABLE III

SOCIAL ORIGIN OF PUPILS ATTENDING THE GRADES VI–VIII IN ELEMENTARY, SENIOR, AND GRAMMAR SCHOOLS IN BOHEMIA AND MORAVIA, DECEMBER 31ST, 1945

Occupation of the Parents	*Number of Pupils*	*Percentage of Pupils in Each Type of School*		
		Elementary	*Senior*	*Grammar School*
Labour	111,293	7 6	88 8	3 6
Agriculture	90,003	10 3	86 2	3 5
Trade and business	80,052	2 9	86 4	10 7
Office work	44,412	0 3	56 5	43 2
Professions	5,867	1 8	59 5	38 7
Lower official employment	40,035	1 9	89 3	8 8
Other occupation	18,155	3 6	84 5	11 9
Occupation unknown	3,340	5 5	87 8	6 7
TOTAL	393,157	5 6	83 4	11 0

The first striking feature revealed by Table III is the small percentage of all children between 11 and 14 attending the elementary schools. Only every twentieth boy or girl (5 6 per cent. of all children of that age) lacked the chance to get a better kind of education, whereas, before the issue of the law of 1935 which declared the senior school (*Obchanska shkola*) compulsory, more than half of all pubescent pupils remained in the elementary schools (the eight-years elementary school). This is why the number of children attending people's and intelligentsia's secondary schools has almost doubled since 1927. However, the most important fact here demonstrated is the enormous preponderance of children from "better homes" (i.e. those of officials and members of the professional classes) in the lower grades of the *Gymnasia* and *Realgymna-*

sium. The intellectual class (office employees and professionals), 50,279 fathers or mothers in all, sent to the grammar school 81 9 per cent of all boys and girls, meanwhile 111,293 working men (or women) participated only to the extent of 3 6 per cent of children in the grammar school population of the first three grades Different theories can be offered to explain this segregation, but such a state of affairs is not consistent even with a liberal democracy, and is out of the question in a state in which the working masses decide in favour of social justice School organisers see only one remedy against this pronounced class system, namely the introduction of a comprehensive school

II Education Act of 1948

In Czechoslovakia the common-school movement has been different from that in Germany and France from the very start In the latter countries it was mainly a fight against the segregation of children at 6 years of age, against the *cours préparatoire* of the French grammar school and the *Vorschule* of the *Gymnasium, Oberrealgymnasium* or *Oberrealschule* As the elementary school up to 11 was common for all children without any discrimination whatever, the Czech teachers' organisations were struggling for common secondary education A large-scale experiment with about thirty multilateral schools for children from 11 to 15 and with one multilateral school "of the third degree" for youth from 15 to 19 paved the way for a comprehensive school system During the occupation a committee of five, the chairman of which became a martyr to the German persecution, prepared the exact wording of a common school law for young people from the age of 6 weeks up to 24 years In the original draft there was a provision for two divisions of the children's hearth (or crèche) from 6 weeks up to 18 months, and from 18 months to 3 years, for the mother-school from 3 to 6, for the school of the first degree (from 6 to 11), second degree (from 11 to 15), third degree (from 15 to 19 *A* for general education, *B* for vocational education), and for the comprehensive university with all branches of pure and applied science)

This draft was the basis for the elaboration of three successive drafts. On April 21st, 1948, the Education Act was accepted by Parliament, and received the signature of the President of the Republic A mother-school (kindergarten, nursery school) is to be erected in any community or factory in which there are more than twenty children registered for schooling between 3 and 6 It is reserved for the Government to state the conditions under which the attendance at the mother-school may be made compulsory for children older than 5 years Schools of the first and second degrees are compulsory for all children without any discrimination.

The national school is intended for children older than 6 years, and has five grades. The intermediate school has four grades, so that compulsory attendance is extended to cover nine years of regular full-time schooling (up to 15 at least). There is a very important article (§32) that indicates a new conception of Czechoslovak education

§32 The pupils of the last grade only are required to do physical work in some branch of economy for not more than four weeks

Schools of the third degree are differentiated into four main groups *A* Fundamental vocational schools are compulsory for all young people who do not attend one of the other types of tertiary school They have, as a rule, three grades, so that compulsory education in Czechoslovakia extends up to about 18 (Certainly these schools for young people in employment are intended only for part-time education. In some branches of industry and trade, pupils have to attend school for sixteen hours a week, in other types of trade for three months in succession in both first and second grades, and four months in the last grade.) *B.* Special vocational schools, which have regularly two or three grades. *C.* Higher vocational schools (for agriculture, industry, commerce, transport, women's occupations, artistic activity, social and health service, etc) They have four grades, as a rule, but the Government may extend the attendance in some schools up to five years. *D Gymnasia* are comprehensive schools of one type only. They have four grades (for young people from 15 to 19) Their chief function is to prepare boys and girls for the schools of higher learning.

According to this "Law Concerning Fundamental Organisation of a Unified School System", there are a few interesting measures· (1) All schools are state-administered Accordingly, there are to be no private schools. (2) All schools are co-educational, as a general rule. (3) There is no tuition fee in Czechoslovak schools and educational institutions of any kind (not even in universities). (4) Schools of the first and second degrees (for primary and secondary education up to 15) are simultaneous. "The school is obliged to provide for its pupils religious education in accord with their faith, except in cases in which the parents (or their legal substitutes) withdraw the child from this education"

This unified and well-co-ordinated system represents the most democratic educational ladder, such a comprehensive, common school as was envisaged by John Amos Comenius in his *Great Didactic.* Nine years of full-time education of the same kind, and at least three years of part-time education of a widely differentiated kind, are not a paper scheme, but an everyday reality at least in the Czech lands. In regard to universality, effectiveness, and

democratic equality the Czechoslovak educational system is unique in the world of to-day It must be mentioned, however, that its democratic centralisation and prohibition of voluntary schools would hardly suit the Anglo-Saxon mentality, which abhors state control and regulation.

Only a comprehensive type of school organisation can assure the same opportunity for everybody. It gives a just basis for leadership in any kind of work. It simplifies the selection for occupational distribution and makes it really democratic at the same time. For the first time in the history of this country, all pupils will get the same type of education in a common school, there will be no social selection before the age of 15. The question of individual differences is not mentioned in the Education Act at all for schools of the first and second degrees. The new course of study provides for them only in extra-curricular activities (in non-obligatory subjects and "interest circles"). In this way there is no selectional break at the age of 11 The new generation of the whole nation goes through the secondary (intermediate) school of one type only; it is subjected only to the internal selective process as shown by success in the different lines of study. "School mortality" (falling-off of pupils on account of lack of intelligence, lack of application, illness, death) alone prevents children from finishing their compulsory education in the ninth grade.

III The First Selective Break at Fifteen

According to article 87 of the Education Act the first three grades of senior and grammar schools were to fuse at the beginning of the school year of 1948–9. At the time of writing the fourth grades of the *Obchanska shkola* (generally called *Mestyanska shkola*) are not yet "comprehensive". The new selective process will be put into effect on September 1st, 1950. However, new regulations for picking out students for different types of vocational education and for the *Gymnasium,* the purpose of which is to give general education as preparation for the schools of higher learning, will probably make slight changes in the present selective method.

At present, the Czechoslovak Institute of Labour is entrusted with the organisation of the selection of children for general or special types of vocation during the last year of compulsory education. There is a staff of about three hundred trained advisers who follow up the work of every pupil, observe his behaviour, and give him personal guidance during the whole year. For this purpose there are advisory offices (*Poradny*) at each county national committee. The purpose of vocational guidance, which is obligatory for all pupils at the end of compulsory education, is to ascertain the following facts (1) Personal characteristics of every boy and girl (abilities, temperamental interests, and moral traits).

(2) Economic needs according to the five-year plan (vacancies in different categories of work). (3) Educational conditions concerning education for work. (4) Social conditions, especially the possibilities of placing the apprentice in a boarding house for young workers

At the time of writing about one hundred thousand boys and girls were on the file in county advisory committees About 25 per cent. of them have been advised to study in tertiary schools of all types, about 75 per cent. have been guided to different occupations. From all these students only about 10 per cent. were submitted to a special psychological examination in the laboratory or by a group-test method. All the procedure is designed to get reliable data as a basis for educational and vocational guidance, but the final judgment is advisory and is submitted for discussion with the parents who have to decide about the life-careers of their own children.

The final advisory judgment is based on the following criteria

(*a*) A thorough medical inspection, including an X-ray picture, is given to each boy and girl. The statement of the physician is required to include counter-indications, if any, i.e description of physical disability for certain types of work or labour.

(*b*) Very important is the estimate of character and other traits as given by the school principal on the basis of the judgment of the teachers who are in constant educational contact with the examinee This estimate contains, in particular, an account of the intelligence of the pupil, his noticeable abilities and interests, efficiency, conscientiousness, physical aptitudes, behaviour, etc.

(*c*) Of course, the official school report (students' marks in all subjects of instruction) is very useful for selectional purposes.

(*d*) Report of the "social worker" (always a woman) about the home, economic, and other personal conditions of the examinee.

(*e*) Report of the adviser of the Czechoslovakia Institute of Labour containing remarks on observations taken of the pupil during the school years, results of inquiries, tests, and other ascertained facts

To determine the students for the selective schools of the third degree (higher vocational schools and *Gymnasia*) is much simpler. This year there will be a "Recommendation Committee" in every secondary school, the task of which is to pick out the best pupils who may be expected to meet the requirements of study on a higher level. In the tertiary schools there will be "Reception Committees" which will decide on the registration of new students on the basis of the statements sent in by recommendation committees of different schools. The purpose of this procedure is to assure the influx of young people drawn from the homes of working men and small farmers into the intellectual group of the nation.

The methods of selection described above are still in the experi-

mental stage. They show clearly the endeavour to attain a higher degree of justice and educational equality. According to the judgement of the chief of the Czechoslovak Institute of Labour, who is entrusted with the selective process at the end of the secondary schooling, the results of the vocational guidance thus planned are encouraging. The boys and girls are informed by specialists in practical occupations, by films, press, and radio about different trades and branches of industry, and also about the prospects of employment. The parents and children accept the advice willingly, as they see the seriousness of both the selective purpose and the procedure. County advisory committees conducting vocational guidance at the end of the secondary school period are regarded as state institutions which are necessary for a planned economy, as they co-ordinate the distribution of human abilities with the distribution of special lines of production

It is certain that the population of the selective schools of the third degree will change considerably in the years to come The talents of the social class of farmers and working people will no longer be lost to the extent that they were under the old system of class selection.

IV The Selection of the Intelligentsia

In 1938 there were in Czechoslovakia ten institutions of higher learning, with 17,566 students Ten years later, in the winter term of 1948, there were fourteen colleges and universities with 49,186 students in this country This trebling of the oncoming intelligentsia is no longer regarded as a serious social menace However, regard for economy of human forces necessitates a more careful and better-planned selection of students

Since the revolution of 1945 there is no tuition fee in the Czechoslovak institutions of higher learning. On the contrary, students whose parents do not have enough money to support them get a scholarship of 1,200 crowns (in the case of outstanding students 1,500 crowns) a month This generous and democratic provision helped to increase the student population. It is much more pleasant to walk around the campus and attend a lecture once in a while (attendance at lectures is not compulsory in Czechoslovak universities) than to be engaged in some private or public occupation.

Up to the winter term of 1948 the selection of college students was prepared by grammar schools only. The higher school certificate was regarded as a reliable and unquestioned document, sufficient to procure registration in any college or university. This certificate was given to grammar school graduates who successfully passed examinations in four subjects.

In the winter term mentioned above, entrance examinations were

introduced in Czechoslovak colleges and universities for the first time. Committees of five (three teachers and two students) were constituted in the institutions of higher learning and were entrusted with the selection of freshmen. There were many committees in every institution Before the examination the office (with the help of the students) prepared a list of all the students' credentials relating to their success in grammar school studies and extra-curricular activities Students who did not obtain a certain number of "points" were eliminated without examination The rest of the students were asked questions concerning broader views of scientific, cultural, and political problems Many students did not show sufficient mental maturity The results of this eliminative kind of selection were different in different departments. In the Faculty of Philosophy in Charles University, out of some five hundred candidates only two hundred and eighty have been admitted, according to the report of the dean In spite of this selective process the number of students in Czechoslovak colleges, institutes of technology, and universities remains very high For this reason the Ministry of Education, Sciences, and Arts ordered a new examination of all students in all institutions of higher learning at the end of the winter term in February 1949

The purpose of the *Provyerka* (purge) was to eliminate inefficient students, especially those who did not take or pass the requisite examinations and were therefore backward in their studies. According to the official report about nine thousand laggards were refused further admission to university and college studies This radical procedure seemed necessary to attain a higher standard of efficiency in these institutions

The school system of liberal democracy favoured social inheritance. There was a marked class selection in Czechoslovak colleges It has been found necessary to assure an influx from the class of workers and farmers to these institutions In December of 1948 the factory councils and farmers' committees were invited to pick out about 1,500 able young working men and farmers, from whom about one thousand intelligent and ambitious young people might be selected for eight-month courses, which would give them sufficient scientific preparation for college education

The results of the examinations were surprising From, 1,329 candidates 318 (24 per cent) passed with excellent results, 561 (42 per cent) with good results, and 450 (34 per cent.) did not pass at all

There have been opened five special state courses in which 816 young men and women, who remained from the original number of applicants, will study in a concise form school subjects of the third degree, under the leadership of specially chosen grammar school teachers, in order to be able to register in universities and institutes of technology.

V. Czechoslovakia—One Big Training College

The new political system of people's democracy needs efficient leadership in every field of work. Not only that, every farmer, workman, office clerk, teacher, technician, higher official has to learn and relearn. A large part of the population goes through vocational and political courses for different lengths of time There is a general endeavour to attain a higher standard of efficiency in farming, in all branches of trade, commerce, and industry

According to the *Bulletin* of the Central Office of the Labour Schools of the Revolutionary Trade-union Movement of April 1949 there are 635 factory labour schools, 213 local labour schools, and 27 boarding-house courses arranged by this association. These schools have a threefold purpose economic (to improve the results of work in all branches of production), political, and cultural The number of lessons in each course varies from thirty to five hundred. The statistics at the end of this article may serve as an illustration of the work done there were 14,316 attendants in the factory labour schools alone during the month of February 1949 As has already been mentioned, all the courses (like all education in this country) are free of charge

It is certain that the political criterion for selecting leaders in offices, factories, or commercial undertakings is very important during the present class struggle. Nevertheless, it is generally recognised that those who lead must be expert workers in their field and must possess desirable character traits It takes time to become an expert. No short courses can make a skilled technical constructor of an unskilled workman However, further education helps to enhance the qualification of those who have already mastered their line of work.

The country has a great need to prepare a new type of men and women, as judges for the people's courts The presidents of courts will remain expert judges with university preparation. It is important that the representatives of the people understand legal order and procedure. This is why a law school for workmen has been created in Prague The boarding school has two classes for 126 young men and women with an age-range of from 25 to 35 years Reports concerning the zeal and intelligence of the candidates are very favourable This interesting experiment characterises the new policy of a democratic country which is based on a selection through education and on a selection plus education

Summary

It is impossible to give a full account of the relation of education to occupational distribution in Czechoslovakia in a short paper.

However, the following facts may be useful for the student of comparative education:

(1) In the last fifty years, Czechoslovakia has changed her system of government six times (monarchical liberal democracy, republican liberal democracy, semi-fascistic system of the Second Republic, national-socialist dictatorship, liberal people's democracy, socialist people's democracy). All these changes have been reflected in school organisation, and have especially affected the system of selection for different occupations.

(2) Occupational selection in this country has been and is influenced by the fact that the western parts of the country are largely industrialised, only 24 per cent of the population being engaged in agriculture

(3) According to the census of 1930 there were, among 6,537,384 people working in any kind of occupation, 3,281,238 workmen, and only 475,891 officials The statistics of 1934 show that 50 9 per cent of the population, namely workmen, had only 4 9 per cent of grammar school graduates, while 7 3 of the population, namely the officials, had 37 6 per cent of boys and girls who had attained a higher school certificate. This fact demonstrates unquestionably the presence of class selection even in a very liberal democracy

(4) The socialist people's democracy is on the way to repair this evident social injustice The Education Act of 1948 roughly divides the school system below the college level into three degrees, of which the first two (primary and secondary schools) are compulsory for all children without any discrimination as to sex, race, religion, or social standing There is only one educational track for all children during the nine years of general full-time schooling. The selection for different life-careers starts only at the age of 15. The motto " Secondary education for all " has become a reality in this country.

(5) The segregation of young people of from 15 to 19 has found its expression in the segregational organisation of Czechoslovak schools The largest part of the population (about 75 per cent. of boys and girls) go to work in fields, factories, shops, or stores. " Fundamental part-time vocational schools " with three year-grades are obligatory for all working youth

About 25 per cent of Czechoslovak youth remains in full-time schools " of the third degree " There are non-selective vocational schools with two- or three-year courses for definite special types of industry or agriculture (ceramic, goldsmith, health service, textile, commerce, architecture, and other schools). Selective vocational schools have a four-year course preparing young people for more responsible positions in agriculture, industry, administrative work, commerce, social service, or other fields of work. Only about 5 per cent of 15-year-old boys and girls will be prepared for

college or university education in the *Gymnasia.* Moreover, all schools of the third degree are co-educational, and free of charge. Schools for exclusively "women's occupations" have been discontinued.

(6) In the socialist people's democracy occupational distribution is beginning to be planned so as not to be affected by chance Leadership and white-collar occupations, which were to a large extent reserved for the progeny of the bourgeois class, will be taken over in a more just proportion than under the old system by the sons and daughters of farmers and workmen The new intelligentsia will spring to a greater extent from the class which seeks to prepare a more human and just society in which there will not be any classes The first steps towards this kind of selection have been taken already in the institutions of higher learning

STATISTICAL SURVEY OF SCHOOLS

Number of Schools, Pupils, and Teachers in Czechoslovakia at the beginning of the School Year 1948–9

Type of School	*Number of Schools*	*Number of Pupils*	*Number of Teachers*
Mother-school (kindergarten)	4,680	206,451	8,167
School of first degree	12,266	1,066,249	32,167
School of second degree	2,308	464,480	16,862
Schools of third degree			
Agricultural fundamental schools	1,103	60,760	3,627
Other fundamental vocational schools	1,027	148,135	5,637
Agricultural schools	294	11,440	1,853
Commercial schools	165	26,151	1,869
Industrial schools	318	29,150	2,408
Special schools (formerly for women's vocations)	444	20,355	2,688
Art schools	4	1,549	—
Schools for social and health service	22	2,581	—
Gymnasia	292	70,440	6,591
Universities, colleges, higher technical institutes	14	49,186	2,150
TOTAL	22,937	2,156,927	84,219

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CHAPTER EIGHT

POLAND

The Social and Economic Background of the School System

It has taken a long time to progress from the idea of the school as an institution for a select few to the democratic idea of the school for all. The history of this progress is a record of centuries of struggle between State and Church, between classes, political parties, and other social groups. The rise of the middle class, the emergence of the working class and its social movements, the coming of the peasant masses to self-consciousness, are notable features of this evolution.

At the time when these changes were taking place in western Europe during the nineteenth century, the Polish nation, divided between three empires, did not live its own normal life The Prussian province of Poland became a producer of foodstuffs, cattle, and dairy products for the industrial areas of Germany Prussian policy favoured the development of agriculture in this province. But it did not favour Polish national culture Bismarck's colonisation scheme aimed at getting the land into German hands. The *Kulturhampf* sentenced to death the Polish nation Polish culture was to disappear. The Polish nation had to fight for its very existence.

Galicia, the Austrian province of Poland, preserved most of the features of the retarded economy of the Polish nobility of the seventeenth and eighteenth centuries. The province was under the sway of the landed aristocracy. They insisted on keeping their monopoly of privilege, but had no ambition to develop industry and to modernise agriculture *The Misery of Galicia* (1888), the title of a famous book by Stanislaw Szczepanowski, had become the proverbial term for this province. Szczepanowski contended that the productive power of the Galician peasant was only one-third of that of the western European. In this province, in Krakow, Joseph Conrad attended a secondary school before he left Poland in 1882 for "sea studies" in France and England

The Russian province was the most industrialised Initially, it was an autonomous Kingdom of Poland created at the Vienna Congress in 1815 with the Russian Tsar as the King of Poland. After the unfortunate national rising in 1831 it was transformed by the Russian Government into one of the many provinces of the

Russian Empire. The activity of foreign capital attracted by the large Russian market developed here a few industrial centres such as the textile district of Lodz and its environs, or the coalmining district of Dombrowa Foreign capital exploited cheap Polish labour, but did not care about the needs of the national economy

In this province also the Polish nation had to fight against Russian nationalist policy When in 1891 Marie Sklodowska-Curie left Warsaw for Paris, the Russian and Prussian provinces of Poland had no Polish schools and no Polish universities The family became the stronghold of national culture. In Warsaw there was a Russian Imperial University. The Polish university in Warsaw, closed by the Russian Government after the Polish national rising in 1831, was reopened only in 1915. For a few years, 1862–9, there existed in Warsaw the so-called Chief School of university grade, which played an enormous role in the intellectual life of the country.

The economic life of the Polish provinces belonging to the different empires did not work for the social and cultural unification of the Polish nation The Polish middle classes were underdeveloped, business elements were mostly of foreign origin The country was mostly rural An enormous gulf separated the various grades of landed gentry from the masses of peasants

From the point of view of national unity two unifying factors call for attention the Roman Catholic Church and the Polish "intelligentsia" The Roman Catholic Church was the only cultural institution which embraced all strata of society. The percentage of Poles who were not Catholics was very small The parish church with its ceremonies became a national institution

The so-called Polish intelligentsia requires more explanation W J. Rose rightly observes in his book *The Rise of Polish Democracy* as follows "In its widest sense, the term 'intelligentsia' included all the professional classes, among them even the large group of civil servants. The majority were hard-working members of their local communities, whose voices seldom reached beyond those limits A few, however, chiefly the journalists and the seekers after knowledge, became known up and down the land as the makers of a new thing—public opinion To achieve this on lines like those of the west was the goal of these crusaders for a better future." [1]

An essential national function of the intelligentsia was to preserve the idea of the Polish nation and its independence Here belonged also the progressive social leaders who popularised knowledge among the lower classes and taught them the ideals of social liberation.

Up to the end of the nineteenth century and even later, the

[1] W. J Rose, *The Rise of Polish Democracy*, 1944, p 42

intelligentsia consisted almost entirely of members of the gentry. Later it was more and more recruited from the sons and daughters of the urban middle class, of peasants and workers. These new recruits to the intelligentsia did not, however, change its character, which remained representative of higher leisure-class culture of a literary, non-utilitarian, and non-occupational type. In this respect the Polish intelligentsia, although urban, inherited the cultural pattern of the landed gentry, not that of the bourgeoisie or of urban patricians keeping in their hands the economic life of the country.

The intelligentsia was the most influential group during the formative period of the new Polish State after the First World War. It kept this position in the country till the outbreak of the Second World War In the first years of independence the radical wing of the intelligentsia played an important political role It had been an organising force in the democratic mass movements, and gave them political leadership. The radical parties, however, never had a majority in the Diet. They lost ground after Pilsudski's *coup d'état* in May 1926

During this new period of Polish political history Pilsudski began to seek collaboration with the conservative landed gentry on the one hand and with the industrialists on the other The visit of this former leader of the Polish Socialist Party to Nieswiez, the ancient home of Prince Radziwill, became symbolic

One must keep in mind the background, just described, to understand the social and cultural structure of the school system and its working. Until the outbreak of the Second World War there was no single unified national school system in Poland The School Reform of 1932, which was to create such a system, did not achieve its aim. There were no economic and social grounds for its realisation.

From the social point of view Poland had a dual educational system· one for the lower and another for the higher strata of society In an educational system such a structure sets definite limits to the occupational and distributional functions of schools Such a system does not work for the improvement of social and occupational mobility, but primarily for the maintenance of the social order, social hierarchy, and stratification of social classes.

The Polish intelligentsia, in particular the school bureaucracy affiliated chiefly with the well-to-do classes and with the Roman Catholic Church, was the chief social force moulding the Polish school system after the year 1926.

Peasant Youth

In springtime early in the morning a boy from a Polish peasant family takes his cows to the pasture-ground. He is 7 years old. Barefoot, a whip in hand, on his shoulders his father's old great-coat, reaching the ground, he looks around uneasily. He is late

this morning. Already the boys from the neighbourhood are all on the pasture-ground It would be a dishonour for him to be seen by neighbours with his cows so late in the village.

A young peasant writes in his life-story that " a young cow-herd's honour is not worse than that of a soldier " He is a member of the pasture-ground " society " He is obedient to the patterns of behaviour of this society, to its customs and its social rules The traditional mode of life of the Polish peasants has made the pasture-ground a social institution The care of the cattle is the duty of children and of old grandfathers There is no cow-herd for the whole hamlet Generally there is no common pasture-ground Every peasant family takes care of the cattle on its own A boy or a girl tending the cows still belongs to Polish national landscape

What future life-career was open to this 7-year-old hero of the pasture-ground? It depended very little on his ability and talents The starting-point of his life and the social structure of his country defined for him the pattern of his future life-career He belonged to his family, to his hamlet and local community

Nowadays rural conditions are rapidly changing Pre-war relations must, however, be understood because they have not been changed completely and still belong to the changing picture of rural life of the present.

Polish peasants live in hamlets Until quite recently many rural communities were characterised by adherence to custom and by isolation from the larger, outside world

The neighbourhood, the local market, the parish, and, not least important, the landlord were the most significant social institutions in peasant life before the Second World War After the Land Reform (in the Russian part of Poland in 1864, in other parts earlier), the landlord lost his previous feudal rights over the peasants Everywhere, however, he exercised much power and authority, owing to his dominant position in the life of the Polish nation

The unit of the economic and social life of the Polish peasantry was the peasant family, which was a group with a strong sense of solidarity In the middle of the nineteenth century and even much later the peasant farm in Poland produced chiefly for itself and only to a most limited extent for exchange Even after the First World War the peasant family depended very little on industrial production for the satisfaction of its needs Polish peasants did not go to the pictures. Some of them read books and bought newspapers But these new interests did not become the general custom of the rural community. The rural community was a world in itself

Large-scale industry (located in Warsaw, Lodz, and a few other places) and the coal and oil districts belonged to the modern inter-

national sphere of world capitalism. The rest of the country, the Polish peasantry in particular, did not belong there. It was a peculiar world on its own, connected with the other world in a way similar to that in which coloured people are connected with the whites in one colonial system. Eugeniusz Kwiatkowski, the well-known Polish statesman, said in 1937 that there is Poland A and Poland B Poland B, according to Kwiatkowski, reached almost to the turnpikes of Warsaw.

The census data of 1931 give us the following groups of population·

CENSUS, 1931

	Number in Thousands	*Percentage*	*Percentage of Children*
Peasants	16,531	52	58
Agricultural workers	2,992	9	10
Urban manual workers [1]	6,548	20	17
Craftsmen, retail traders, etc	3,536	11	10 5
Civil service and other salaried groups	1,534	5	3
Landowners, great entrepreneurs, clergy, and independent professions, e g doctors, etc	608	2	1 5

[1] *Less than half in industry, more than half in trade workshops, commerce, railways, public utilities, and domestic service*

The foregoing gives us the structure of a country economically retarded. The percentage of wage labourers outside agriculture was only 25 per cent and that of "independent" craftsmen and shopkeepers 11 per cent.

Not less illuminating are the percentages of children (see table)

We shall see later that the last three groups of population, which supplied only 15 per cent. of the whole youth of the nation, almost monopolised the secondary and higher schools in Poland To these groups belonged 85 per cent. of university students

What life-career could be chosen by a boy from a peasant family? The traditional ideal of social position was to become an independent farm-owner. A grown-up boy was eager to demonstrate the supreme proof of manhood—that he could support himself, his wife, and his children on his independent farm. Parents divided family land among their children, but they did not hurry over this operation, which put in danger their power and authority over the family. Children had to wait. Grown-up children were encouraged by parents to migrate, to bring back money, to buy a piece of land in the neighbourhood and to settle near by. The social standing of an individual in the local community was determined by the standing of his family in this community.

A very good illustration of the historical process is given by the

story of a farm in Galicia. Owned in 1851 by Marcin Pokrywka, the farm covered at that time 25 hectares. In 1936 in its place we find ten small farms and one larger one of 5 hectares In the meantime eleven grandchildren of Pokrywka had emigrated to America.

In the regions of Warsaw, of Lodz, and of the coalmines and in some other industrial districts young peasants went to the factories and mines and became workmen. But the country was poorly industrialised and did not want many workmen.

Young peasants migrated abroad to Brazil, to the coalmines of Westphalia, and to the factories of the U.S.A. Sociological studies of Polish immigrants in America, in particular Thomas and Znaniecki's *Polish Peasant,* have made explicit the fact that immigrants did not easily break away from the traditions of the family and its neighbourhood community. On the contrary, their adherence to tradition was extremely strong. Their attitudes centred round the ownership of land To buy a farm in his native country near his native village was the life ideal of an immigrant

This rural ideal characterised also the strong social movements of young Polish peasants after the First World War They believed in the social and moral superiority of traditional peasant community life over modern industrialism At the same time Polish economists demonstrated that Polish agriculture had a surplus adult population (between the ages of fourteen and sixty) of at least 25 per cent or 2 5 million. Polish agriculture had no prospect of modernisation because the whole country had no prospects of industrialisation.

Some peasant children became clergymen and teachers, but only very rare exceptions had a chance to move into the higher social strata of businessmen, professional men, university professors, and other circles of the Polish intelligentsia.

From Rural Communities to Coalmines and Factories

Here is a story of a boy from a poor peasant family, taken from the ponderous volume of *Life-stories of Polish Emigrants* (1939). Nine children in the house and one bed for three to four people Our 11-year-old boy is the oldest of the children. He must work, he is a cow-herd responsible for thirty cows and calves. At the age of 18 he left his home and began to work in the coalmine "Paris" "Paris" (as it was known among the Polish workers) was located in the coalmining region of Dombrowa in the Russian province of Poland. Like the majority of coalmines, it belonged to foreign capital

Our boy came to town. He was frightened, he cried He understood hardly anybody because they did not speak his peasant dialect. He could not read or write. This town near his native hamlet was a foreign country to him. Later he learned to read and

write. His first lessons in reading began on sign-boards and placards. He joined the Communist movement. He wrote his autobiography in France, where he worked in a coalmine after leaving Poland because of political persecution in 1923

He did not explain why he had chosen coalmining. From other autobiographies of Polish coalminers of the same generation, who began their life-career in coalmines before the First World War, we learn, however, of some factors which led to their choosing this hard profession The coalminers came from the surrounding rural population. To enter this occupation it was not necessary to have education Physical health and ambition were most important. Wages were higher than elsewhere The occupation was dangerous, but it gave a sense of professional pride. The coalmines had a very strong attraction Sons followed their fathers, neighbours followed neighbours

Not all Polish workmen started their occupational career as illiterates Recently the memoirs of a former workman, entitled *Old and New,* have been published by Lucjan Rudnicki In this book the author has given a picture of his workman's road to Lodz, the half-million-strong textile city of central Poland In this shapeless city known as the "Manchester" of Poland industries were mostly in the hands of German businessmen The workers were almost entirely Polish.

The young people from villages and small country towns came to this "promised land" Such is the title of Reymont's novel about Lodz. In the years of prosperity the stream of people flowed to Lodz, and at the time of crisis it flowed back to the country. Nobody controlled this stream, which was spontaneous, regulated only by contacts within the family, or between neighbours Similar streams of people were flowing to a few other industrial centres in Poland and to America. Nowhere was school education absolutely necessary in order to enter unskilled occupations in industry.

Before the First World War, in the Russian part of Poland, which was its most industrialised province, there were elementary schools for only 20 per cent. of the children of school age. In other provinces the school situation was much better.

Rudnicki began to work in the Polish "Manchester" before the First World War after passing through an elementary school Here in the factory he discovered a new world of industrialism, and the new social sense of his own life He took an active part in the Communist movement and became a leader. The Labour movement made him a man of culture His *Old and New* won the literary prize of 1948.

The School and Social Movements

Looking at the school from the point of view of modern society, one does not see any peculiar problem in the fact that people send

their children to school. The educational problem of modern society results from the relations between the educational system and social and occupational mobility. We ask how far planned occupational distribution can go, and how much education and what kind of education it can provide

From the sociological point of view, however, sending children to school is a custom connected with the school as a social institution School as a social institution is not found everywhere. There are no schools among the Eskimos or many other primitive peoples The development of the school has been associated with the evolution of the social and economic system. Children or young people are subjects for education not as biological organisms but as members of society Sociologically school is to be explained in terms of its relation to the family, to household economy and the local community, to the factory system and social classes, to various social institutions and groups, and to the whole social structure of the vast modern society The sociological analysis of the school is concerned with the changeable social status of children and young people in society and the role of the school in the process of social segregation and occupational distribution

When Poland regained independence after the First World War in 1918 it had to provide schools for all children, to give peasants schools, and to get them used to sending children to schools

This was the central educational problem of Poland at that time It was not easy to solve it In 1935 Poland still had outside its schools about a million children of school age It was not only a question of the financial basis of the school system It was an intricate problem of the whole economic and social structure of the country Everywhere the development of the school system went hand in hand with urbanisation and industrialisation.

What is the purpose of teaching children to read and write, if they have to live in a primitive tribe? Reading and writing were not necessary in order to become a good member of a peasant family, a good neighbour in the local community, or even the chairman of the parish committee Reading the Bible is not a religious duty among the Polish Roman Catholic peasants.

In the traditional peasant community there was no room for the custom of sending children to school There was no stimulus to acquire literary culture. On the contrary, literary culture was a natural enemy of paternal authority based on the wisdom of tradition. This wisdom says that book learning is no good for peasants The young generation of peasants had to fight for schools and education not only with higher social classes which did not understand their aspirations They had to fight also with their own parents.

In the *Polish Peasant in Europe and America* (1918–20), the five-volume publication by W. I. Thomas and F. Znaniecki, we

have a very good picture of changes among the Polish peasantry which began in the second half of the nineteenth century. According to these authors, "among the Polish peasants we find three co-existing stages of economic development with their accompanying mental attitudes (1) the survival of the old family economy, in which economic values are still to a large extent qualitative, not yet subordinated to the idea of quantity, and the dominant attitude is the interest in getting a good living, not the tendency to get rich; (2) the spontaneously developed stage of individual economy, marked by a quantification of economic values and a corresponding tendency to make a fortune or to increase it, (3) the stage of co-operation, developing mainly under external influences, in which economic values and attitudes are subordinated to the moral point of view." [1]

At the first stage all categories of economic life have a distinctly social character. They are connected primarily with the existence of family and neighbourhood, secondarily with the local market The economic situation is socially important only in relation to social standing in the local community. At this stage the school is not part of the rural community because it has no meaning for social standing within it.

The assimilation of the school by the rural community is very much the problem of the individualisation characteristic of the second stage of development. This process is associated with the relation of the individual to the world outside his community New individualistic attitudes are developing which are due to contacts with the outside world.

The third stage is that of peasants' associations and peasants' social movements which are connected with the emergence of peasant class consciousness and with the role of the peasant class in the establishment of national unity of the new social type.

Chalasinski's *The Young Generation of Peasants,* a four-volume work published in Polish in 1938, deals with the second and the third stages of the above-outlined evolution of the Polish peasantry It is based on young peasants' autobiographies collected in 1937. This publication points out how strong in rural school education even after 1918 was the tradition derived from the nobility, which divided the whole of social and cultural reality into two separate worlds· that of the gentleman and that of the peasant. According to this division the school as a social institution belongs to the sphere of the gentleman's values, and sending children to school is primarily a question of social standing.

In life-stories published and analysed in *The Young Generation of Peasants* we have a detailed picture of the clash between children's strivings for social standing within their family and tradi-

[1] W I Thomas and F Znaniecki, *The Polish Peasant in Europe and* America, Vol I, p 156 (New York, 1927, 2nd ed)

tional local community, and the demands of the school which came into the rural community from outside as an institution moulded by leisure-class culture and by the patronising attitude of the gentleman towards the villager.

In effect the shaping of the rural boy's or girl's personality was subject to the influence of competing loyalties that to his family and that to the school. The behaviour which is required of the schoolboy could not be harmonised with that required of a young member of a peasant family whose duty was to take care of the cattle. As a member of his peasant family the boy was constantly priding himself on the things he could do alone, thereby helping his family in the hard business of life He did not like it when anybody tried to help him lift a load or perform a task that taxed his strength His parents were never sentimental they brought up their children to heavy duties and to daily work, not to free time and to reading books From the very beginning life taught this boy realism, shrewdness, and self-reliance. His education was mostly left to himself and mainly achieved by his partnership in the family business of life His family expected from him an active part in the daily work and nobody paid attention to his "personality"

Imagine this boy entering school "I was very suspicious of the mildness of our mistress at the school," a boy tells us. "She stroked our heads I hated her for her tenderness She taught us to sing silly childish songs, she did not know that we sang already soldiers' songs of battle-fields" The boy did not want to learn poetry by heart But slowly he began to change. His taste changed He began to like poetry He became jealous of his books. Suddenly he discovered that he liked his teacher and hated his former companions from the pasture He became self-conscious and romantic

The school environment made him take the social role of a school child This role-taking was the process of conforming to the expectations of the school as a social group and social institution. The boy liked to deserve the teacher's recognition But school expectations did not harmonise with family demands, they were in conflict with each other The peasant family expected from children and young people participation in the daily work, and in the family's struggle for life The school, on the contrary, was based on freedom from the burden of life, on the right of man to a care-free childhood and youth. The use of words and other symbols, protective moral verbalism, sentimentality and romanticism, the tendency towards personal and private interpretations of life experience, strong personal drives for individual success, regard for politeness—these are the traits of a definite type of culture of which the school is an institution. The habits and customs of rural communities do not belong here

The cow-herd and the schoolboy are enemies who are intolerant of each other. They belong to different social classes, and to distinct sub-cultures within a single country. They represent different types of personality organisation One is group-centred, the other self-centred.

To understand the processes by which the school functioned in the rural community in Poland at that time it is necessary to take into consideration the fact that the peasants did not participate in the historic process of forming the school as a social-cultural institution The rural school in Poland was formed under the protective influence of the Church and of higher social classes. What kind of aspirations could such a school develop among the peasants' children? First, that of becoming a clergyman; later, a teacher or an office clerk.

By the end of the nineteenth century the peasants' social and political movements began to take an active part in discussing school problems They demanded rural schools, to educate enlightened peasants but not deserters from the peasants' social class But only after the First World War was the school regarded by the social movements of the Young Polish Peasants as a chief instrument of the peasants' fight for social liberation. Class-conscious movements of peasants then organised their own "folk universities"

The urban population of Poland, apart from the members of progressive social movements, was not friendly towards these aspirations of the peasants' children At the time when the younger generation of peasants was demanding more and more education, more and more books and knowledge, most of the Polish intellectuals were discussing the danger to the nation of a surplus of intellectuals.

The autobiographies of young peasants which are printed and analysed in *The Young Generation of Peasants* picture the emerging self-consciousness of Polish peasantry fighting against the social and cultural patronage of higher social classes We have here a dramatic story of the battle of the young generation of Polish peasants against "the slavish soul" of their own class The school in the rural community became the battlefield of emancipatory social strivings against the old tradition of serfdom. The Young Peasants' movement demanded that the school should be a social institution of the peasantry and should become their instrument in the fight for social liberation.

About the year 1934–5, 80 per cent of the children of the country finished their education at the age of 13–14. They were the children of the lower social strata, mostly rural. Out of these school leavers less than 1 per cent. went later to vocational schools. The total number of school leavers in 1934–5 from all kinds of school was 700,000. Of this number only 9 per cent. left voca-

tional schools and schools beyond elementary level. Ninety-one per cent left elementary schools. Over 50 per cent. of elementary school leavers completed no more than four grades They were mostly rural children They stayed at home, where they were superfluous It was a large economic problem connected with the necessity of changing the whole retarded economic structure of the country.

The followers of the peasants' movement striving for social liberation did not think over the problem in the economic terms of modern society The ideals and programmes of the movement concentrated on the problem of the new social standing of the peasantry and its social role in the national community, but not on the economic problem of occupational distribution on a national scale The idea of the school was here associated primarily with the striving for the new social standing of the peasantry in society.

Was this point of view peculiar to peasants' social movements? Not at all The same point of view was dominant in the working-class movement, the Socialist movement in particular

And also the same point of view was dominant among the higher social classes, particularly among the Polish intelligentsia So everywhere, in all the social strata of Polish society, the school system was regarded primarily as an instrument for the stratification of social classes but not as an instrument of planned occupational distribution In this respect the social history of the educational system in Poland is not an exception On the contrary, it corroborates the conclusions which may be drawn from the school history of other countries

Social Stratification and Occupational Distribution

The secondary school in Poland has not developed, as in the U S A., as an upward extension of the public elementary school On the contrary, the secondary school in Poland is the best expression of the selective principle in education Its opportunities had been extended to all children of higher social classes and to only a small percentage of the children of the lower classes. The doors of the secondary school were open to the children of the classes favoured by birth. Others had to win the right to enter this school by their superior intellectual gifts.

What R. H Tawney has written of English schools in his *Equality* may be said of Polish schools as well. Tawney has said "When the boys and girls of well-to-do parents attain the great age of thirteen to fourteen, no one asks whether—absurd phrase—they are 'capable of profiting' by further education. They continue their education as a matter of course, not because they are exceptional, but because they are normal, and the question of the 'profit' which they succeed in deriving from it is left, quite rightly, to be answered later. Working-class children have the same needs

to be met, and the same powers to be developed. But their opportunities of developing them are rationed, like bread in a famine, under stringent precautions, as though, were secondary education made too accessible, the world would end—as it is possible, indeed, that one sort of world might." [1]

According to the Polish school reform of 1932 the first form of secondary school (*gimnazjum*) had as its foundation six grades of elementary schools. Pupils could enter the first form of *gimnazjum* without examination when they passed through the sixth grade of the elementary school. What was the outcome of this reform?

Of English schools Tawney has written that "less than one child in seven of those leaving the elementary schools wins access, after being strained at eleven through the sieve of a competitive examination, to the secondary education" (p 186) According to Polish investigation by Falski based on data for 1934–5, the average percentage for all social groups was exactly the same—14 1 per cent The percentage was, however, very different for various social groups. For children from larger farms (15–50 hectares) the percentage was 11 7 per cent. The percentage for the farms of 5–15 hectares was 4 1 per cent and for farms below 5 hectares only 3 1 per cent. The percentage for better-paid industrial workers was 4 6 per cent, and for workers on low wages it amounted only to 3 2 per cent For the liberal professions the percentage was 80 per cent, for urban intellectual workers and the larger landowners between 55 per cent and 70 per cent For the lower clerical service 22 per cent The children of lower social strata showed also a higher percentage of falling off in the higher classes of *gimnazjum* and *liceum*

The selective character of the secondary school has also another aspect. The secondary school opened the door to the university They both belonged to the same educational system of the intelligentsia, a system which was quite separate from the public elementary schools and from vocational schools Within the single social stratum of the intelligentsia we have two levels of education —a lower and an upper. A certificate from a secondary school conferred the social standing of a member of the intelligentsia University diplomas were not only certificates of social standing but also professional diplomas for the youth of the intelligentsia. The university in Poland had the monopoly in the production of teachers for secondary schools, lawyers, physicians, dentists, pharmaceutical chemists, and officers of public administration. Other higher schools of university grade produced engineers, economists, and others The university, however, was primarily regarded as a non-vocational temple of human knowledge. Professional instruction was its secondary function. The idea of a "general educa-

[1] R. H. Tawney, *Equality*, p 186, (New York, 1931)

tion " or " liberal education " which did not provide qualifications for any special occupation was not less important to the university than to the secondary school. This idea was associated with leisure-class culture, and with the higher social standing of the intelligentsia. Vocational schools did not give the right of entrance to the university. Even the graduates of the teachers' training school did not possess this right The teachers' training school, which was of secondary school grade, belonged to the same school system as the public elementary school, but did not belong with the secondary schools for general education or with the university.

General education was also the essential subject-matter of educational science in Polish universities Education departments took no interest in the problems of industrial or rural education

The foregoing leads us to the question of the relationship of general school education to apprenticeship In England, education by apprenticeship has a very old and respectable tradition, not only in industry but also in professions such as medicine or the law. In Poland it was otherwise. Here apprenticeship was regarded as a system of education for the lower classes. It was a dishonour for the child of a member of the intelligentsia to become an apprentice in any workshop. The social standing gained by a boy or girl through secondary school matriculation was believed to be endangered by such apprenticeship. This is the reason why the school reform of 1932 created types of school such as the " tailors' *gimnazjum* " or the " merchants' *gimnazjum* ", where the idea of occupational training was associated with the noble idea of *gimnazjum* but not with the vulgar idea of apprenticeship

This attitude towards apprenticeship contributed to the quest for university degrees and titles. The great demand for the title of doctor of law is typical of this trend It came from Galicia, so much retarded in its economic development, and spread over the whole Polish intelligentsia after the liberation of Poland in 1918.

We learn that in 1934–5 in England (without Wales and Scotland) there was one university student to 1,013 inhabitants At the same time in the U S.A the relation was one to 125, in France one to 480, and in Poland one to 700.

Carr-Saunders's investigation based on the data for 1921 reveals that the percentage of public elementary school leavers who entered the university was 0·42 per cent According to G. Ellis this percentage was 0 73 per cent. Similar Polish investigation for 1937 by Falski reveals that out of the pupils of the first grade of public elementary schools 1 3 per cent. entered the higher schools of the university grade

Let us add that the national income in 1929 per adult male in Polish *zloty* was in England 1,760, but in Poland 830. Besides, the popularisation of knowledge is much wider in England and has a much older tradition than in Poland.

Why has the poorer country the higher percentage of attendance at universities? Is it due to the English anti-intellectualism of which Dean Inge has written somewhere? If so, why do so great a percentage of American young people study at the universities? Certainly there is no more intellectualism among the Americans than among the English.

The American high school and the American college, with its over-developed athletics, have a very peculiar role in the national life of America The American college has already lost many elements of traditional higher learning and is still changing E. D Martin, in his *The Meaning of a Liberal Education,* called it "the grown-up kindergarten" Other writers call attention to the democratic tendency of American high school and college to embrace all the young people from all social strata and to educate them in the common atmosphere of a people's college The Polish secondary school belongs neither to the English "great public school" type, nor to that of the American high school. In Polish secondary and higher learning the ideal of intellectualism co-exists with the tradition of the social superiority of the nobility

It is not easy to analyse and interpret comparative statistics I have given them here in order to illustrate what a difficult task it is to present comparatively the role of school system in the processes of social stratification, and of occupational distribution

Everywhere the educational system is related to social strata and to economic occupations These two elements are associated with each other but not everywhere in the same way. "Bourgeoisie" has not the same meaning in France, England, the U S A, or Poland. But quite rightly R H. Tawney in his *Equality* has written that "even to-day, indeed, though less regularly than in the past, class tends to determine occupation rather than occupation class" (p 58) Class lines set limits to the occupational function of the school But the class divisions of society, which interfere with occupational mobility, vary widely not only in the same country at different times but also in different countries at the same time

A Polish investigation based on the data for 1934–5 gives the following picture of the social composition of the students of universities and schools of university grade, according to the social standing of the father landowners of over 50 hectares and industrialists and businessmen—9 1 per cent.; peasants from 5 to 50 hectares and urban middle-class—19·4 per cent.; peasants below 5 hectares and working class—13 7 per cent , intellectual workers—57 8 per cent This last percentage is striking. It illustrates the extent to which the university in Poland may be called the social institution of the Polish intelligentsia

Let us add that 79 1 per cent. of the students are children of

city dwellers, although the percentage of urban population in Poland in 1931 was only 27 2 per cent.

In one vocation students of rural stock were in the majority. This was a very peculiar trait of the theological faculties. Here the percentage coming from rural areas was 61 4 per cent, and was made up mostly of the sons of peasants and of manual workers in agriculture. This peculiarity is to be explained by two factors one is the traditional social prestige of the priest among the old generation of Polish peasants, the other the boarding houses organised by Church authorities.

The foregoing is very instructive for the understanding of the relation of the university to the problem of occupational distribution It shows us the university as an institution of urban communities

The same may be said of the secondary schools and even of higher grades of the elementary school In the year 1934–5, 51 per cent of rural children got their education in the schools of the lowest grade of one room with only one teacher.

Pre-war investigations by Falski, based on the statistical data for 1935–6, reveal for peasant children in elementary schools the percentage of pupils enrolled in the sixth grade in relation to the number of the pupils of peasant stock in the first grade This percentage was 23 8 for the farms from 5 to 15 hectares, 17 3 for the farms below 5 hectares, and 15 7 for agricultural workers For skilled industrial workers the equivalent percentage was 62 per cent, for the unskilled, 41 5 per cent The difference of percentage between peasants and industrial workers is very striking It corroborates the fact that all education beyond the lowest level was the privilege of urban population Let us add also that out of 140,000 hamlets and 20,000 rural schools the library service reached systematically only 2,300 library points

This does not mean, however, that secondary schools and higher learning institutions which were located in cities and served mostly the urban population were permeated strongly by the personality ideals of modern business civilisation. Among the youth of the Polish intelligentsia the dominant social and cultural ideal was not that of a successful businessman, as in the urbanised society of the U S A, but rather that of a man of leisure-class culture characteristic of the higher landed gentry.

To the cultural heritage of the nobility, which lacked any high standards of vocational culture, one must add the other cultural sources of Polish universities. The ideas underlying the Polish universities belong to the intellectual forces that have shaped European culture From classical antiquity and from humanism come the ideas of the unity of human knowledge and the theory of general education which underlie not only the Polish universities but also the secondary schools.

Polish intellectuals had no tendency to adapt the universities to the problems and needs of modern economic society. They stood for intellectual aristocratism This tendency did not strengthen the weak democratic tradition of Polish cultural life.

The danger of the infiltration of the children of peasants into the intelligentsia was much discussed before the last war. Among the intellectuals of the nationalist movement, as well as among the intellectuals following the selective road of Pilsudski's dictatorship, there was a strong aversion from the egalitarian tendencies of the radical social movement The selective trend was strengthened by the penetration of the ideas of Italian Fascism and German Nazism

The National Thought, the weekly associated with the strongly nationalist movement, gave warning of the danger to national culture arising from the peasant invasion of the Polish intelligentsia. *National Thought* wrote in 1935 that "there is no need for new leadership because the latter should be regained by the landed gentry and clergy." "Our cultural élite"—this paper wrote in 1937—"should preserve its gentry character, only the élite of the nobility type can be the rightful heir to our culture"

Youth and the Labour Market

In the foregoing considerations the social aspect of the problem of occupational distribution has been emphasised The problem has been analysed in relation to the stratification of social groups. But it has also an economic and quantitative aspect It is a problem of the labour market and its economic relations

First, one must keep in mind the structure of the labour market in Poland It has been mentioned already that the market for wage labour was very small. For the year 1929, which was the end of the period of prosperity, there were in Poland 15 5 million people active in all fields of productive activity Of this number over 11 million were engaged in agriculture. Of these, 9 6 million were peasants, mostly small-holders Outside agriculture 4 5 million were active. Of these, 1 2 million were in industry, and 1 2 million in the crafts. The peculiar feature of the Polish labour market was the preponderance of "independent" people like peasants or craftsmen, and the small hired-labour market. This resulted from the low economic level of the industrial activity of the country. The same cause led to the low percentage of intellectual workers engaged in industry In the highly industrialised area of Silesia this percentage was 35 per cent., but outside this area it was from 6 per cent. to 17 per cent The most primitive economic structure was that of the eastern provinces. The percentage of population living there was 40

One of the features of the structure of labour relations here described was that the labour market could not absorb many new-

comers. According to the publication *Young People Are Seeking Jobs* (1938), from which I have taken the foregoing data, it was necessary to create new workshops merely to absorb the whole of the natural growth of urban manual workers For the natural surplus of the rural population there were no jobs at all in the urban labour market The children of peasants coming to the city had to compete with the children of urban working men The young peasants entered unskilled occupations at very low wages. Peasant immigration to urban workshops was a constant factor working against the standards of the labouring class.

According to the publication just mentioned, every year, owing to the natural mobility of the population, 70,000 places became vacant in the labour market, apart from agriculture. Against this there were 370,000 newcomers seeking jobs. Out of this number 140,000 were urban children and 230,000 were children of peasants and manual farmworkers The latter number is the natural surplus we obtain if from the number of 405,000 rural children (peasants and manual farmworkers) entering active life every year, we subtract 175,000 places left vacant in agriculture

The investigation made by the Institute of Social Economy based on the data for the year 1934–5 reveals that there were 2 5 million members of the rural population who stayed at home although there was no need for them in agriculture, because they could not find jobs outside

Another investigation, by Jozef Poniatowski, gave a surplus of 8 million people in Polish agriculture. (The number of peasants and rural manual workers amounted to 20 million.) This investigation was based on theoretical assumptions as to the amount of productive power sufficient to keep agriculture at its economic level

It is clear that in the circumstances described between leaving school and entering employment there was a period of job-seeking The investigation for 1935 revealed that in Warsaw, among workers' children of 15–17, only one-third began to work even among young people of 18–20, little more than 50 per cent. got jobs

At the same time industrialists complained of the lack of young people fitted to enter skilled occupations in industry. The vocational school system did not answer the needs of economic life The vocational school was a branch of education traditionally neglected in Poland.

In the year 1934–5 there were in Poland 500,000 young people of 18–21 In the same year the number of children who left secondary schools for general education was 13,000 and the number who left vocational schools was also 13,000

Other interesting tendencies are revealed by changes in the numbers of students in various departments. From the investiga-

tion by H. Wittlin it appears that between 1921 and 1936 technological studies were the branch of studies of the academic grade which developed least.

The Polish school system is not to be blamed for difficulties of occupational mobility. These difficulties were also only to a very small extent connected with the business cycles of economic life. The enormous number of young people who had no hope of productive jobs was a feature of the economic structure of the country The problem of these young people could not be solved without the industrialisation of the country

What prospect was there of that? University professors of economics as well as industrialists advised adherence to the policies followed by English economic liberalism in the Victorian age That was bound to fail, and did fail. Many important branches of Polish industry, such as oil, coalmining, and others, were under the sway of foreign capital, which was not interested in the industrial development of Poland Very often the foreign industrialist destroyed the factory which was in competition with his factories in other countries This was so in the case of the textile industry of Zyazdow near Warsaw, controlled by a French businessman, M Boussac, a " king of cotton "

The retarded economic structure of the country demanded of the nation unusual efforts and economic reforms Otherwise the Polish youth and the Polish nation had no future

Just before the outbreak of the last war great popularity was gained by a novel by Mostowicz, *Nikodem Dyzma's Career* The hero of the novel, a hungry Warsaw job-seeker, accidentally entered an evening party given by the Prime Minister. While he was eating voraciously a dignitary pushed him Dyzma did not know who he was and scolded him His impertinence was the beginning of his career A provincial trickster looking at this scene took him for an important person who might scold ministers, and engaged him in his dirty business Nobody investigated why this story of Dyzma's career gained so much popularity.

Post-war Reforms and Tendencies

The war and the German occupation of Poland brought enormous changes in the occupational problems of the country. The Nazis closed not only all the universities and institutions of higher learning but also all the schools of general education beyond the elementary grade. The Nazis used all means to annihilate the Polish nation. In the German concentration camps several million Poles met death from exhaustion or were killed by poison. The annihilation system was particularly directed against the Polish intelligentsia.

The medical profession may be a good illustration of the dimensions of the Nazi murder factory. In 1923 there were 7,000

physicians in Poland, after fifteen years of work by the Polish universities the number of physicians in 1938 amounted to 13,000. After almost six years of Nazi occupation the number of physicians dropped to 7,000, that is, to the position as it had been in 1923.

The task of the Polish nation after the war was not only to repair the enormous damage caused to Polish economy by the war and by the Nazi occupation In the light of previous considerations we have seen that without industrialisation there was no possibility of solving the country's occupational problem, or indeed its many other important problems. The problem of industrial development was the vital issue for the Polish nation. Without it there was no hope of the removal of that socio-economic system which was a mixture of the social remains of "feudalism" with a kind of "colonialism"

This was the background of the big programme of industrialisation which the Polish Government started The first step in this direction was the nationalisation of industry

This programme of the Polish Government was not only economic It was based on new social leadership of the revolutionary Labour Movement, a leadership which was assumed by the Polish Workers' Party

Of course, the new trend has found its expression also in the field of education The school reform started by the Government aimed at a radical and rapid democratization of secondary schools and institutions of higher learning "We must destroy the monopoly of the higher social strata in higher learning," said Minister of Education Stanislaw Skrzeszewski to the Polish Youth in May 1947 The minister illustrated his talk by a reference to pre-war statistics The Government has organised courses which enable workers' and peasants' children to enter the higher learning establishments without secondary school matriculation

The democratization programme went hand in hand with the programme for the development of vocational schools The six-years national plan for the industrial development of the country includes vocational schooling for non-agricultural occupations of 800,000–900,000 skilled workers, 80,000–100,000 technologists, and about 24,000 engineers This enormous programme aims at the creation of a new technological intelligentsia Moreover, in nationalised Polish industry, workmen are systematically advanced to higher managerial positions The new intelligentsia, recruiting from the workers' and peasants' masses and expressing new democratic ideals and aspirations, is to become the fundamental force directing the Polish nation towards new social democracy.

Conclusion

The considerations presented here are based on Polish data and material. The sociological interpretation of the facts contributes,

however, to the science of education. They are based on a theoretical assumption which in Poland was first presented by Florian Znaniecki in his *Sociology of Education* (1928–30) and developed by the writer of this article in his books *Society and Education* (1948) and *School and Society in the United States of America* (1936).

According to this assumption the concept of education cannot be separated from the concept of social group Education is always involved in social relations and processes within a complex of social groups in a given society Church and State, local communities, social classes and strata, and various associations.

The definition of education by its cultural content is not satisfactory The culture itself differentiates into various types in so far as it takes shape under the influence of various social groups

From this point of view social mobility is the mobility of members of various social groups It means the movement of individuals between social groups It always concerns the social role of the human being It is not a mechanical process of a physical body in geographic or geometric space

Therefore occupational distribution is always the problem of social mobility, that of relations between social groups It is not merely the problem of inequalities of income

The problem of occupational distribution is always concerned with the definite structure of society, which is characterised by the dominance and leadership of definite groups. One must not neglect the problem of the stratification of social classes and of other social groups. The most acute states of lack of equilibrium in the labour market, like that illustrated by Polish labour relations, can be removed only by changing the relations of group dominance in society.

Educational science alone is helpless to solve the problem Helpless also are the educational authorities alone The problem involves the co-operation of educational authorities and industrial authorities in the great modern economic society. It can be solved only on the basis of a planned economy, not on the basis of classical liberal economy.

Any methodological abstraction which constructs an educational theory isolated from social relations must fail to reveal the intricacy of the problem of occupational distribution

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CHAPTER NINE

GERMANY

As in all European and American countries, the German school system is at the same time a system of vocational differentiation. The masses of peasantry both untrained and traditionally prepared for agricultural work take the way of the eight-years *Volksschule* The final aim of this school, however, is not attained by some of the pupils, who, as a result of having spent two years in one of the lower forms, leave school without passing into the top form Only in the reformed schools is this repetition of a year's work avoided by organisation into groups retaining the form unit irrespective of the standard of work Fortunately, during the nineteenth century and to a lesser degree also to-day, the eight-years *Volksschule* has remained the school for ambitious and able children It is the first step in training for agriculture, and especially for arts and crafts, for the manual worker and the skilled mechanic. One can say without exaggeration that the economic strength which keeps the overcrowded industrialised country in action is based on highly developed scientific culture and on the trained manual workers and skilled mechanics These vocations for keen men and industrious women require intelligence and a high level of practical ability There exists an intelligence of the hand, which these people possess and which is combined in their best representatives with high-character features, with foresight and confident independence, which values the factual approach and the work of their hands. In the case of women, nursing and domestic vocations also demand these character features together with keen intelligence, a kind of intuition, which approaches facts objectively and at the same time behaves humanely towards other people, without separating objectivity from humanity Since the foundation of the *Volksschule* in the seventeenth century it has been primarily these skilled vocations which were the concern of the school, and recent reformers have retained this intention However, the more the industrialisation of society progressed, the less adequate was the eight-years *Volksschule* to concentrate on vocational guidance, since the pupils left school at the age of 14 either as unskilled labourers or as apprentices. A special vocational school has developed side by side with the *Volksschule* to complete the vocational training of apprentices and unskilled workers. At first it was an evening or Sunday school, later it operated on a free weekday, attendance

being voluntary at the beginning, but afterwards compulsory. Attendance at vocational continuation schools is compulsory at present up to the age of 18. Elementary education should be broadened in them and complemented by civic instruction and hygiene, but, as it is, the greater part of the limited time is devoted to vocational, technological, and partly practical work in special fields. A secondary education of a kind and a continued training up to 18 years for all is thus compulsory in Germany. But its influence is small. It completes the gaps in vocational training, it is quite good from a technical point of view, but as regards social, moral, political, or general humanist education, it hardly achieves anything. These schools suffer from lack of time The reform movement is directed towards the addition of a second weekday to the time-table and the building up of social-humanist content side by side with the vocational-technical.

The second fault of the *Volksschule* consists in the predominantly intellectual general education, which has no connection with vocational training. Children leave school at 14 and are suddenly confronted with the choice of vocation without any knowledge of labour conditions and opportunities which in great cities are entirely separated from the residential areas Factories and workshops are closed to children The child living in a flat has no opportunity of visiting workshops, gardens, or fields, and thus is isolated from the whole sphere of manual labour until suddenly he has to choose a vocation or work the whole day with his hands. The reformers, therefore, started to introduce manual work. In this way the urban child is given an opportunity of training in dealing with material and tools and also of acquiring habits of constructive thought through independently solving small working problems They want to give the children a kind of grammar of practical activities for their future daily work. In the past, Georg Kerschensteiner was most prominent in this direction, and his pioneering work in Munich was followed by all reformers.

As a second measure the reformers introduced vocational guidance in the top form of the *Volksschule*. Teachers visit workshops, factories, and offices with their classes, they make maps of the most important kinds of local labour, they invite specialists and officials to lecture, and they mediate in finding posts The Labour Exchange has close contact with one of the teachers in each school, who serves as a liaison officer.

In recent years the experiment was made in Hamburg of adding a ninth year to the *Volksschule* and incorporating it with the vocational school. The neglected state of war children and the lack of school buildings demanded the adoption of this measure Children were given vocational guidance and were sent for a time to work in workshops to gain experience in new occupations. The right choice of vocation was thus facilitated, although the conditions in

the factories during the first post-war years were unfavourable for such experiments

Modern industrialised society and the centralised State administration, with their quick and complex transport and specialised functions, have created a mass of vocations which require special training with respective basic knowledge. These clerks, intermediaries, or specialists receive education in technical schools or special courses before entering offices or industrial firms. It is evident that pupils cannot receive adequate preparation for these vocations in the *Volksschule* They require either a better training in mathematics, or a broader realistic knowledge of nature and the world, or a command of modern foreign languages and a better command of German, or in some cases the combination of all these. For these groups of activities appropriate to technical merchants, engineers, office clerks, lower-grade civil servants, bank managers, laboratory workers, and many similar workers, a basic education of post-primary status has been developed On the one hand the *Volksschule* was enlarged into the *Mittelschule* or intermediate school with a ten-years course On the other hand there has been the foundation of separate *Realschulen* (modern secondary schools), high schools for girls, and other varieties, which accepted children at the age of 10. A branch of these schools has prolonged education up to the age of 18, and has so closely approached the academic *Gymnasium* that since 1900 it has been recognised as a nine-years *Oberrealschule* with a full right of matriculation. It became a rival of the traditional learned school and prepared for higher education.

This kind of intermediate and secondary school of a realistic type is a need of modern industrialised society and has been developed in various ways in all industrial countries Everywhere it eventually leads to the university In these specialised occupations the choice of vocation inevitably depends on the social status of the parents Even the apprenticeship in arts and crafts is more expensive than the choice of unskilled labour. Attendance at intermediate or secondary *Real* school keeps the youth from gainful occupation up to the age of 16 or 18 and demands additional expenditure, thus limiting the candidates to children of wealthier parents, or of those who are ready to make a greater sacrifice. This way is worth while only if the chosen occupation promises an income which will repay the expensive education, or if strong cultural reasons promote it. Among these reasons the higher social status of some vocations and greater chances of promotion must be included. Present European society considers it unjust to deny the child the choice of a vocation equivalent to his ability, which is accepted as the product of nature. Consequently the modern society accepts the liberal principle which demands equality of educational opportunity for each child in vocational competition.

Radical opinion goes beyond this principle in demanding equalitarian justice The radicals, through the intervention of the State, want to eliminate entirely the family tradition which influences the son to follow in his father's steps During the 'twenties the German Republic established a system of bursaries for the able children of the poor to open for them access to all qualified vocations and to afford to each an education appropriate to his ability. For this purpose some of the *Lands* created large foundations Thus for higher abilities the Education Fund of the German People and the Wurttemberg Markel Foundation proved to be very beneficial. Industrial concerns have promoted the bursaries by special funds, such as the Carl-Zeiss Foundation or Robert-Bosch-Works. The methods of selection were perfected, and simple advice or intelligence test was complemented by extensive personal interviews by many experts representing various approaches In present-day Germany, State policy also endeavours to lead the child to the most suitable vocation according to its individuality and to provide educational assistance for the highly gifted An unprejudiced observation of social life and the growth of personality certainly leads to the opinion that family tradition cannot be eliminated The desire to establish equal chances for all persons by artificial means is a theoretical aim which is neither sensible nor attainable. Parents transmit not only heredity to their children, but also a heritage—the spiritual and moral readiness for some vocational activity If a father has been successful in life in spite of many obstacles, his son will follow him more easily than a strange child If certain abilities are present in a family and are fostered by the atmosphere of the home from childhood, they develop more quickly in the impressionable age, so that equally able children from other environments can hardly compete with them This is especially known to happen in the families of musicians, but it is also true of farmers, merchants, and scientists. Artificial equalisation of opportunities will hardly eliminate the historical inequality. Certain capacities do not grow in the short time of individual life, they are accumulated rather through the experience and efforts of generations. If there is an intention of supplanting the influence of the parental home it would be necessary to establish more intensive educational institutions like Catholic monasteries or Jesuit colleges. Nevertheless, the democratic or liberal state, in its school policy, should endeavour to adopt all means to attain equality of opportunities, wherever possible.

The intermediate and *Real* schools, owing to their specialised curriculum, are selective by necessity. Two questions of great importance for a social policy therefore arise. First· at what age should the selection take place? If the needs of society are to be considered the number of selected children will be substantial. It may amount to 15 or 20 per cent. of age-groups, according to the

state of industrialisation. The increase of competition in conditions of growing population and diminishing agricultural production, which as a rule follow industrialisation, will necessarily lead to a greater social pressure for longer education. Possibly the methods of selection will also be perfected. Within the German economic structure the selection of 20 per cent. or almost all children of higher ability would constitute a great danger. It would mean that these abilities would be lost to arts and crafts and mechanical vocations, which is undesirable from the economic point of view Then the skilled manual vocations would lack the people of intelligence and character on whom their full development depends The clerical vocations would attract all those who are primarily endowed for arts and crafts. Or on the other hand, it might mean that skilled manual vocations would receive their basic training in intermediate and *Real* schools instead of *Volksschule* Then the former would have to be considerably changed and the *Volksschule* would merely be a school for unskilled workers and rural districts Since 1945 school reformers have attempted to find a solution which guards against this danger. The most effective would be the raising of the standards of the *Volksschule* Another way would be to adapt the *Real* school to manual abilities and leave the door open to practical, constructive, and nursing vocations. The interest in independent manual production must be maintained, and the transfer of active individuals to literary-artistic branches would thus be prevented without injuring the broader cultural and intellectual training Georg Kerschensteiner recognised these dangers before other school reformers He pointed out that young people can be alienated from manual productive work if between 14 and 18 they are compelled to study books only to digest over and over again old thoughts and old experiences. In the *Landerziehungsheimen* of Hermann Lietz and Kurt Hahn the pupils were encouraged to learn some manual craft during their school years and to pass an apprenticeship examination concurrently with matriculation For girls the intervals between school teaching should be devoted to a practical year If the *Real* schools develop in this direction and differentiate into many branches in accordance with differing abilities and inclinations, without losing the unity of school society, it will lead to a desirable end. Then the *Volksschule* through a reform and inner differentiation will approach the *Real* school and its top forms will coalesce with the intermediate stage of the latter. Then the present difference in general education between the constructive manual and clerical and intermediary vocations will disappear. And the *Real* school will better attain its own educational aims It will cease to be a school of general learned education, but will be an institution of further basic education for qualified vocations of the industrial world in its diversity.

The learned Latin school is the oldest in Europe, whether it

be the English grammar school or the German *Gymnasium*. Up to the beginning of this century it was a school type which had a clear purpose and was well organised in its methods. It served as basic vocational training for the clergy, for physicians, lawyers, and academic teachers, as well as for new recruits for research These professions—a very small percentage of all occupations—need a special scientific education. In spite of the division of labour all branches of knowledge formed one unified system well into the nineteenth century Thus the basic learned training led to the understanding of the creative spiritual life and to the development of research Even to-day it has the same task. Consequently this training inevitably has a definite selective character and carries with it a higher social status and thus is the path whereby highly gifted and industrious individuals can raise themselves socially. Selection for this purpose must be attempted at the earliest possible age The required training includes the transmission and understanding of the richest spiritual heritage of humanity It amounts to the understanding and absorption of manifold literature written in Greek, Latin, and three or four modern languages The world of thought of two-thousand-years-old theology and philosophy, as well as of constantly advancing natural science and mathematics, has created a terminology and scientific standards which must be thoroughly mastered in order to contrive the advance We must, therefore, gain time and apply methods of training economically. It is necessary to begin the basic learning early, in childhood The foundation of the grammatical-rhetorical knowledge must be firmly laid, so that the adolescent will easily be able to interpret basic thoughts of the past and classical authors It does not mean that all the best abilities should be directed this way. If the realistic training is devoid of scientific training it closes the door to creative and organising technical and artistic abilities But it is in the interests of all to direct children suitable for scientific learning to the separate way of academic education If it begins, as has been usual, at the age of 10, then, as experience has proved, it is possible to decide after the first year whether the academic curriculum will be profitable The learning of Latin or French from the very beginning makes it possible in every particular case to arrive early at a fairly sound judgement However, some of these early abilities are suddenly retarded during puberty, whilst slower-developing children manifest their gifts just at this period. For these the way of the *Aufbauschule* (secondary school for adolescents), or of special additional courses, is open which will lead them to an academic career at a later age. Transfer from the top forms of the *Real* school should also be possible

However, the German school movement of the twentieth century has chosen another way The realistic schools were granted the right of matriculation and thus were entrusted with the task of

basic academic learning. On the other hand, the old *Gymnasium* was divided into classical, modern-linguistic or mathematic-scientific varieties, or combinations of them The essential unity of basic academic learning was thus abandoned It was believed that the broad contents of the old curriculum could be replaced by basic formal education. The requirements of academic ability could be thus essentially lowered and the number of academic schools considerably increased This solution resulted in two defects First, the realistic school has lost its original aim by being transformed from a school of worldly education into a school of basic academic training, although only a fragmentary one Secondly, the universities could no longer count on their students' having had a uniform preparatory education. It was necessary to introduce elementary courses in classical languages and to prolong the course of studies or to abandon the general academic standard expected from students

The present discussions on the reform of higher education are occupied with these difficulties. The opinions of various governments and school experts do not agree, and the individual German *Lands* pursue different policies The exchange of opinions between the specialists and public bodies on these questions has started only recently

WILHELM FLITNER

CHAPTER TEN

SPAIN

Vocational Education

FOR some years now, interest in social problems has been making itself felt in various aspects of the life of Spain. If we turn to politics, we can see how the influence of workers' organisations has been on the increase in the various types of occupation The workers' organisations are definite entities which control, not only industrial relations, but the economic life of the country in all its aspects The predominating influence of the workers' organisations is manifest, too, in the Cortes, Spain's supreme legislative body So great is it, indeed, that it may be regarded as a decisive factor in all legislation affecting the economic or industrial life of the State The influence of social questions is making itself felt, too, in the national economy itself In view of the ever-increasing need for specialist workers for the running of Spanish industry, a constantly growing interest is being shown in vocational training of the workers, and there is a similar increase in the social activities that aim at securing harmony between capital, technology, and labour.

In the activities of the Church, too, may be seen the markedly social outlook of our times. In addition to the general interest in these questions that is being shown by the whole body of the clergy, we have constantly before us such activities as the sociology weeks arranged periodically by the *Acción Católica,* schools for social workers and training schools for social studies established recently for the clergy in some dioceses.

The impact of social problems, especially in the realm of industry, is not outside the scope of education This chapter aims at showing the extent to which educational organisations and educational practice in Spain are linked up with the industrial life of the country right up from the primary school to the higher educational system.

The subject will be dealt with under seven headings primary education, the middle school general course, the middle school "popular" course, agricultural training, higher education, special institutions and social factors bearing on choice of occupation.

Primary Education.—Even if it is true that at the primary level education is least touched by the industrial life of a nation, it is none the less true that in the Act of July 18th, 1945, on the sub-

ject of Primary Education, social studies are made to stand out (in Article 8) as one of the fundamental elements in primary education (cf. "Primary Education shall give compulsory training directed towards the inculcation of the social habits that are a necessary foundation for a harmonious society").

In Article 18 of the Act mentioned above, specific reference is made to vocational guidance for young people, and it is there laid down that there shall be a fourth stage in the child's school life, a stage called the vocational initiation period, for children from 12 to 15 years of age.

Since 1922 the large graded schools have had what are called "Complementary Classes", which aim at supplementing primary education with knowledge and skills that shall fit the pupils for the work they will be taking up later on In some schools boys of 12 to 14 do carpentry, locksmith's work, bookbinding, drawing, modelling, shorthand, typewriting, and bookkeeping, while in girls' schools some of the above subjects are taken, and in addition upholstery, work in cardboard, basket-making, dressmaking, and, in general, all the types of practical work that may be regarded as indispensable for the training of good housewives

There has also been some interesting educational work in rural areas, in the matter of organising experimental farms for the school children, a departure brought about chiefly through the agency of the *Instituto Nacional de Prevision* These educational farms offer facilities for the pupils of the school to work together for the production of wealth while, at the same time, they become familiar with industrial procedure and co-operative trading These are real co-operative organisations which supply the school and its pupils with funds and at the same time widen the outlook of, and offer incentive to, the people of the countryside In these experimental farms the work is mainly agricultural or connected with ancillary occupations, such as poultry-keeping, bee-keeping, and rabbit-breeding Three hundred and ten such farms are in existence at the present time

Mention must also be made of the work of the *Instituto Social de la Marina,* which has established along the coast of Spain the so-called *Escuelas de orientacion maritima y pesquera,* in which, attended as they are, for the most part, by the sons of fishermen, the curriculum has a very marked bearing on seafaring occupations.

In the Act dealing with primary education referred to above, these types of training are mentioned specifically and are given official recognition, while the school-leaving age is raised to 15 to allow pupils time for their technical training. Article 23 of the Act lays down that junior technical schools shall have an agricultural, industrial, or commercial bias in keeping with the traditions and general background of the district or township in which they

are established. In addition, training shall be provided for girls in hand-work and in domestic subjects

Junior technical schools may be of three types

Permanent— getting a full course of training

Seasonal—fitting in with local or seasonal needs

Peripatetic—consisting of teams of persons with the appropriate equipment, etc, necessary for holding courses of training in different localities

The setting up of this scheme of technical training within the primary educational system has brought with it the problem of training the necessary teachers, and in the scheme of the teachers' training colleges as at present organised, special courses are provided leading up to supplementary certificates which qualify masters to give courses of lectures and practical work in vocational subjects. For the training of masters actually teaching in the national education service, the Ministry of Education has authorised the Association of Engineers and Licentiates in Arts and Science to organise special qualifying courses for headmasters and assistant teachers in primary schools. At the present moment four such courses have been established

In some cases technical education is given, not in the schools, but in workshops in the town, under the supervision of the school. The head of the school arranges for the apprenticeship of his pupils in the workshop they choose. Mornings are spent in the general-education course in school and afternoons in practical work in the workshop After a trial period, and in accordance with the reports of the master in charge of workshop studies and the master of the pupil himself, the boy either goes on with the course on which he has started or passes on to a new type of work. This procedure is repeated until, eventually, the boy finds the type of work in which he can be most happily and usefully engaged

Secondary Technical Education—General secondary education is given, as a rule, in the national secondary schools and in recognised private colleges Its aim is the acquisition of general culture at a higher level than that given in the primary school and serving as a preparation for entry to the universities or schools of higher studies.

Pupils may enter the secondary school at 10 years of age The course covers seven academic years. It follows, therefore, that in the lower forms there are pupils of the same age as those who are attending primary schools. The secondary school course leads up to the Bachillerato qualification granted as the result of a school-leaving examination conducted by the universities. The subjects of the Bachillerato are, of course, not of a vocational nature. At the end of the first stage in the course (reached after four years of study), the pupil may pass on to a specialist school which will

qualify him for the "secondary type" occupations. These are set out below·

Normal Schools, which, reorganised in accordance with the Primary Education Act of 1945, train primary school teachers through the study of three subjects general education, pedagogic science and methodology, and practical teaching. There are such schools in the fifty provinces of Spain. Girls and boys work in separate schools

Commercial Schools (which give the title of Commercial Perito (or expert) teacher and foreman) may be looked on as of secondary school level when leading to the first two of these qualifications Their courses of study cover general education, commercial practice, commercial law, and modern languages. There are nineteen such schools

Schools for Technicians —The highest technical professions are paralleled by a number of kindred posts of the technical assistant type with academic qualifications at the secondary school level The schools for industrial technicians, of which there are sixteen in Spain, prepare pupils to become technical assistants to engineers and cater for specialisation in four fields mechanical, electrical, chemical, and textile

There are four schools for agricultural technicians These qualify their pupils to act as technical assistants to fully qualified agricultural engineers.

Forestry assistants are trained in a special forestry school in Madrid.

Public works assistants are trained in the School of Highway, Port and Canal Engineering situated, too, in the capital

The schools for Architecture at Madrid, Barcelona, and Bilbão conduct courses for master builders

Schools for mines' foremen in the mining and metallurgical regions of Spain train skilled assistants to mining engineers.

Maritime Occupations.—There are four maritime schools in Spain. These schools train officers for the Mercantile Marine. The courses comprise technical subjects and foreign languages.

The educational institutions touched on above have already built up for themselves a firmly established tradition They award certificates which are recognised qualifications for certain appointments in Spain The training given by them is closely related to the specific fields of activity within which their certificates give them the right to practise. In almost all the schools mentioned a limit is placed on the number of students to be admitted in each year.

"Popular" Secondary Education.—Along with these traditional courses of education there are courses which could be termed "Popular" Secondary Education courses, which aim, not at a par-

ticular paper qualification, but at giving a sound and effective practical education.

The old schools of arts and crafts give a supplementary general education as well as workshop practice. A number of schools of this type aim at little more than supplementing general education.

The labour schools give expression to the strong present tendency in favour of basing training for manual occupations on solid foundations. In the work of these schools the State, the workers' organisations, and industry each play their part. The statute concerning technical training dates back to 1928, but the educational problem of technical training for the masses was not adequately dealt with till the foundation of apprentice schools under the auspices of the employers or of the workers' organisations as provided for in legislation dating from 1939. The Ministry of Industry and Commerce, the Ministry of Labour, and the Ministry of Education have co-operated in this movement

The State has instituted junior labour schools, of which there are at the moment seventy-two Their mission is to train foremen. There are two distinct possibilities in these schools a full school course in which, within the school buildings, both theoretical and practical instruction is given, a mixed course on which the apprentice works during the day in workshop or factory and carries on supplementary studies in night schools, either with a view to improving himself in his field of work or to attaining the status of skilled tradesman

Within the workers' organisations there is a section concerned with technical training and which, since 1940, has conducted workshop-schools and specialist schools for the various callings Here too apprentices may follow a full-time course or take advantage of evening classes with a view to improving their qualifications Industrial enterprises, under obligation to provide apprentice schools if they employ more than a hundred skilled workers, have given a great impetus to the development of vocational training. Progress has been more marked, as was to be expected in the more highly industrial areas The *Altos Hornos* school at Bilbão stands out as a model

The general scheme in apprentice schools is to combine productive employment with apprenticeship to a skilled trade. There are a variety of courses, ranging from two to eight years The first year or two are spent in the school workshop before the pupil proceeds to production in the workshops proper.

Three sets of factors are taken into account in deciding on the type of vocational training that these schools shall give to any individual pupil the apprentice's own desires and aptitudes; psycho-technical factors; and actual output under working conditions.

The apprentice's personal tastes, even when they do not exactly tally with his aptitudes, give a direct indication of the type of work in which he will be most interested and into which he would put his heart and soul These are factors which undoubtedly exert an influence on output. The results of the psycho-technical tests, considered from the point of view of their prognostic significance, are brought into relation, in the main, with psycho-physical data obtained by the procedures most commonly applied in connection with vocational-guidance work. The output produced by the pupil himself in the school workshop offers some measure of concrete evidence as to aptitudes and abilities As the occupations for which training is given in the apprentice schools are based on the work of the factories where they are established, there is generally a plant on which the fundamental processes of the industry can be dealt with for example, in the schools in the great metallurgical works there are shops dealing with moulding and founding, forging and ironwork, jewellery, boilermaking and turning, as well as electrical plants.

The work of the school may be looked at from two different angles by the business concern itself it is regarded as a means of training and discovering the best craftsmen, so far as the pupils are concerned, they are given an opportunity for guidance and practice in the types of work most suited to their particular kinds of ability

The number of apprentices is determined by the actual needs of the business concerned, plus a certain percentage, a percentage which tends to be in the region of thirty-three and a third, to allow for a working margin This over-production has a double value on the one hand, it makes it possible to supply staff to other concerns, which can thus derive benefit from the training that apprentices receive in the school; on the other hand, there is the fact that the factory which trains them is in a position to pick out from among the pupils of its school those that show the most outstanding special abilities

Since these factory schools have been in action they have given proof of their value as training institutions Possibly their success is due to the fact that training is carried out in actual working conditions, thus fitting in with the general rule of educational practice, according to which skill in any kind of activity is "increased by practice, in the exercise of that particular activity", the pupils then are not brought up in the sometimes artificial atmosphere of a school divorced from reality, but in the very atmosphere of real workaday life At the present, however, works schools have one drawback, namely that of training solely and simply in types of work related specifically to the particular factory in question

This limitation is not present in the apprentice schools set up by certain groups of concerns which have combined for the pur-

pose, and this despite the fact that, having less than a hundred employees, many of them are under no legal obligation to establish such schools the success they achieve, together with considerations of economy, has made this a very worth-while departure.

It must be noted that in these apprentice schools the pupil is not looked upon merely as an economic pawn, but as one whose needs as an individual have to be taken into account, and so hand in hand with the specific technical training given by the schools there goes an educational influence designed to ensure that pupils shall acquire a general culture adapted to their needs. Similarly, attention is paid to the inculcation of such habits and the imparting of such knowledge in the field of sociology and religion as shall fit the apprentice to live harmoniously with his fellows and to work out his eternal destiny

Some religious orders co-operate with other bodies in the conduct of apprentice schools an example is the *Virgen de la Paloma Institution* in Madrid, in which the Salesian Order co-operates Elsewhere, religious orders maintain institutions for vocational training the Jesuits, for example, conduct their own *Instituto de Miraflores del Palo* in Malaga, in which there is a section for general education and a technical training school at the middle school level

Vocational Training for Agriculture—Agriculture, it must be remembered, is the most outstanding factor in the Spanish economy, and, for this reason, the agricultural vocational schools are of special interest. In the great majority of Spanish villages the child is born into a typical atmosphere in which the life of the countryside is intimately bound up with the results of many generations of hard toil In general, he possesses from the moment he is born an economic interest in the soil, this fact determines in large measure the future occupation of a large proportion of the children of Spain.

Specialised agricultural courses for farmers were first given by peripatetic teachers, this organisation, which was originated by the National Agricultural Service, was given new impetus in the period following 1927

In this matter of agricultural training, however, the most interesting work is that carried out in farm-schools distributed throughout the various regions of Spain.

Some fifty of these schools are in existence (thirty-eight are already working, the others under way) The most important among them are undoubtedly that at Caldas de Montbuy, established by the provincial authority of Barcelona, the school of our Lady at Cogullada, set up by the Saragossa Savings Bank and the Agricultural Institute at Quiros, run by the Cistercians in the Province of Santander In general, these are boarding schools, and the pupils are given not only vocational training in the strict

sense of the term, but a general education with the Christian-Social bias which is a feature of Spanish schools. These schools exert an even greater influence than the apprentice schools, none of which has boarders.

It is worthy of note here that, speaking generally, these schools give preference to the children of agriculturalists and, in particular, to those who are likely to have to live in places where agriculture predominates In Spain there is a widespread tendency for children to leave the countryside when they have acquired something better in the way of education than that given in primary schools. The agricultural vocational schools, whose specific aim is to train children for agricultural pursuits, are working hard to counteract this tendency for the countryside to be depopulated through excessive attraction of employment in Government offices

The teaching is predominantly practical and covers all the types of work that normally are found in the areas in which the schools are located Nowadays this practical training in no way prevents the acquisition of certain bodies of knowledge which can contribute towards giving a scientific explanation of traditional practices. Those that are worthy of preservation are maintained while bad practices are discontinued pupils will thus be enabled to rid the countryside of the bad traditions which weigh so heavily on it Moreover, pupils are trained to profit from books and magazines specialising in agricultural questions and which give information on the value of new methods and improvement of existing ones.

As is to be expected, the agricultural vocational schools possess classrooms, laboratories, and libraries as well as hostels for boarders, in addition, they possess large areas of land, some of which is planted with trees, some devoted to cultivation with or without irrigation and including plots for experimentation and control of experiments. Furthermore, for industries depending on the countryside and which can be maintained and developed by the members of one family, suitable facilities are provided.

In 1939 the National Colonial Institute was founded, and from April 1945 on, it has created agricultural schools designed to enhance the agricultural knowledge of new farm-holders.[1] The teachers in these schools are trained for the agricultural side of their work in courses of study organised by the National Colonial Institute. More than a hundred such schools have been established

Worthy of note, too, are the efforts being made by a number of organisations for raising the standard of vocational training in rural areas.

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[1] One of the fundamental activities of the Colonial Institute is to split up large properties and parcel them out to small proprietors (the former ones having been duly compensated), always provided that such splitting up shall render the properties in question more productive.

The Livestock Department sends round peripatetic laboratories and equipment to give training in industries related to agricultural products.

The *Confederaciones Hidrograficas* (large irrigation concerns) have established demonstration farms designed to show by practical methods the types of cultivation that can be used on land that it is now possible to bring into cultivation as a result of the establishment of new irrigation works Similarly, the Forestry Department has started educational work connected with re-afforestation

Although the project is as yet only in embryo, we may mention here the interest that has existed for some years now in high educational and political circles in the institution of Bachillerato qualifications in practical subjects Of these, the one that is felt to be the most urgent is a Bachillerato in Agriculture.

The proposed Agricultural Bachillerato has a double objective in the first place, the training of managers of small agricultural and livestock businesses, and secondly, the possibility that the countryside, with all that goes on there and all its problems, may serve, too, as a field of studies in which young people who wish to enter universities may be trained.

Furthermore, the possibility of establishing consultation centres for agriculturalists in the various provinces of Spain is envisaged

At the present moment a commission is at work with the object of bringing into being the agricultural institutes which shall give effect to these aspirations These institutes could make an effective contribution to the training of rural teachers with a view to bringing educational vocational training in the primary schools to full fruition

Higher Education—In Spain, higher education possesses a marked vocational bias, seeing that the possession of the qualifications awarded by the various university faculties and specialist schools are indispensable for practising in the liberal professions It seems unnecessary, therefore, that we should go into the organisation of higher education in Spain We shall, however, touch on the new departures that recent years have brought about and some of the problems with which higher education is faced in so far as the exercise of the liberal professions is concerned.

One result of legislation on university questions in 1943 has been that the Spanish university, which possessed, traditionally, faculties of Philosophy and Letters, Science, Law, Medicine, and Pharmacy, now has two new faculties the faculty of Political and Economic Sciences and a faculty of Veterinary Science. It is interesting to note the markedly technical and economic character of each of these new faculties

It is worth while to underline the technical bias that has been given to the teaching in the Faculty of Pure Science, in which the

degree of Doctor of Industrial Chemistry has been established

The Faculty of Veterinary Science is no innovation except in so far as an old specialist school has now been incorporated in the university with the status of a university faculty.

The Faculty of Political and Economic Sciences has given effect to a growing concern for the training of specialists in the world of finance and economics, which hold an increasing importance in the life of the nation. Graduates in this faculty are destined for positions of high responsibility in the fields of business and administration.

The doctorate in Industrial Chemistry may be regarded as a manifestation of the realistic and practical character which, side by side with the traditional humanism, nowadays permeates Spanish education at all levels.

The first students reading for the Licentiate in Political and Economic Sciences and for the doctorate in Industrial Chemistry completed their studies in 1947.

Those of the higher professions that are most closely linked with industry are becoming more closely associated with the specialist schools of engineering and architecture, which now possess a well-earned prestige.

It is interesting, however, to note the difference that exists in the matter of orientation between university training properly so-called and that which is given in the specialist schools

The university is open, without any limitations as to numbers, to all who show the necessary ability The ever-increasing desire on the part of young people to embark on university careers leads first of all to overcrowded classes, and then to an over-production of persons holding university qualifications, a state of things which is on the point of bringing about intellectual stagnation.

At the other extreme are the specialist schools which put a limit on their numbers of admission, this has the advantage of producing greater effectiveness in the teaching This restriction, however, has a serious negative aspect, namely the smallness of the number of technicians they train compared with the needs of industry at the present time and of the possibilities for development that exist in Spanish industry.

Socially and materially, engineers and architects stand at a higher level than university graduates, but on the other hand, we have to confess that they are powerless to supply Spain's technical needs, seeing that many of them are absorbed into purely bureaucratic posts. In actual fact, free competition does not exist in the higher technical professions

Alongside the official bodies mention must be made of two institutions established by the Jesuits· the Deusto Commercial University of Bilbão, for the study of law and economics, and the Catholic Institute of Arts and Crafts in Madrid, which trains

industrial engineers in various branches of study as well as producing qualified technical assistants.

Special Institutions

Schools of Social Studies —Special reference must be made to those institutions which, while they do not offer a training for any specific profession in the ordinary acceptance of the term " profession ", aim, nevertheless, at providing a training for those who intend to devote their lives to giving practical help in the solution of the sort of problems with which the ordinary family may be faced.

Such are the training schools for social-welfare workers, which, though they enjoy no official recognition, are doing work of such value that before their students have completed their courses, they are being sought out by various enterprises who want to use their services among the families of their employees.

Two of these institutions have been at work for some years now, one in Madrid and the other in Barcelona These schools train women as social-welfare workers. By social-welfare workers we mean " those persons who dedicate their lives to helping others to maintain themselves at a normal standard of existence or to get back to such a level when they happen to have fallen below it." In the field of social service they act as intermediaries between employers and individual workers, and their principal task lies in teaching working-class families what rights they possess under the law, and how they may take advantage of them both in the economic field and in the matter of social assistance. In their work for women these welfare workers give information on the conditions relating to women in industry and on the care of children, they give help and advice to women workers both during pregnancy and while they are nursing mothers

The courses given in the Social Workers' Training School include religious training and legal, pedagogical, medical, and social studies In addition to facilities for work in the classroom, there are dispensaries and centres for practical work in medical, social, and housecraft studies.

At the present time children's courts and provincial committees for the protection of young persons, as well as the *Patronato* for the protection of women, which are official bodies, like to enlist the services of holders of the diploma awarded by the schools of training in domestic and social studies.

Vocational-guidance Centres —In the specific field of vocational guidance and selection, though both sides are closely interrelated, the work of selection is actually carried on in the centres of working units, whereas vocational guidance is dealt with in educational institutions, such as some of those mentioned in this chapter or in special *ad hoc* establishments

In Spain vocational guidance is given in vocational-guidance bureaux, twenty of which are functioning at the present time. These are located in the principal provincial capitals and official centres

Of these bureaux, some are under the National Institute of Vocational Psychology, which has its headquarters in Madrid, some under the sister institute in Barcelona Both were founded in the first quarter of the present century.

The services of the vocational-guidance bureaux are available to all who apply for them, either as private individuals or through a school.

Although there is no official connection between these bureaux and the centres of education, there are a considerable number of Government schools which, before giving vocational guidance, send their pupils to the vocational-guidance bureaux for an independent estimate of their special abilities and aptitudes.

The Institute of Vocational Selection, a private institution that caters for pupils of outstanding abilities, makes a point of using the findings of the Psycho-technical Institute of Madrid for consideration along with its own findings.

Similarly, the Law for the Protection of School Children, established for the co-ordination of public assistance to pupils of outstanding merit, insists on psycho-technical tests The vocational-guidance bureaux are playing on the moral side a role equal in importance to that played by them on the vocational, namely that of concerning themselves with those who have failed to secure any sort of employment, and of giving them advice on the kinds of work that would be most suited to their special abilities

Factors bearing on the Choice of Occupation —A word of warning is necessary before embarking on a study of the factors governing the choice of an occupation It is impossible to isolate the various factors completely If we start from the point of view of the physical-social setting, it could be argued that in Spain a rural background exercises a greater influence on choice of occupation than does an urban one

A high proportion, perhaps more than 75 per cent., of those born into an agricultural, stock-raising, or fishing background adopt the occupation into which they are born and to which their parents belong Side by side with this fact, we may note the contrast offered by urban areas where alone the standard of life of the parents is maintained in the case of the children. The children of working-class people, as a rule, become manual workers, the children of skilled workers go, as a rule, into skilled trades, but quite often, in point of fact, they adopt different types of occupation— the son of a mason may become a shoemaker, the son of a chauffeur a hairdresser. In the learned professions a teacher's son may become a doctor, a barrister's son an engineer, and so on.

Two factors may be noted as contributing to stability of occupation in rural areas and mobility in the great centres of population. For one thing, there is in urban areas a greater choice of occupations that can be taken up without leaving home On the other hand, and this is especially the case in the northern half of Spain, where property has been very much subdivided, village families are generally owners of the sources of production—land, stock, fishing boats—and in these the young people possess a certain guarantee that they may go on comfortably in the pursuit of the occupations followed by their parents. However, we must recognise the fact that there does exist a tendency among the youth of the countryside to migrate to the towns and try their luck

This tendency is probably due to the glamour of the cities, which is so much talked about and which manifests itself in easier facilities for entertainment, to there being none of the hard physical work of the countryside, and to the greater variety offered by life there as compared with the monotony of life in the country these young people have not as yet had any experience of hard work in a city[1] The move to the towns persists, despite the fact that since the war conditions of life are much harder in the towns than in the country

Economic conditions within the family exert a considerable influence on the choice of occupation in all rural and working-class families there may be observed a desire, more or less clearly expressed, to free the children from manual labour, and it is no exaggeration to assert that everyone who can aims at entering a skilled occupation or liberal profession. Working-class families produce a high percentage of schoolmasters, the reason being, in the main, that of the professions known to village people, it is the one that demands the shortest training training as a doctor, pharmacist, or barrister is much longer, and therefore more expensive.

To make up for the lack of funds among the people, a law in favour of needy school children was passed in 1944 to ensure that no school child possessing ability should fail, owing to lack of funds, to secure a higher education fitted to his own particular bent. The money that has been made available for this purpose is still inadequate for the fulfilment of the needs of all the school population under this head, but, at the present time, some 30 per cent. of all students are exempted from the payment of college fees, and upwards of 10 per cent enjoy grants to cover the whole of their personal expenses In private educational institutions not less than 15 per cent. of the students must be scholarship holders.

The tendency for children to follow their fathers' occupation is a result of the various consequences arising from success in the occupation by which he earns his living—of prestige the family has derived from things having gone well, say in some skilled trade or other, of family inertia, of the accumulation in a particular walk

of life of funds with which the family activities can be developed and expanded, and finally because the father can help in the training of his son and at the same time use his business connections on behalf of his successor in the business.

This handing on of businesses from father to son is most common in those occupations which call for an expensive outfit or a special type of clientele, such as is the case with barristers or doctors. In the army, too, continuity in the profession is rather common, perhaps owing to the working of family tradition pure and simple.

Personal qualities in those who aspire to particular occupations are taken into account in scarcely any institution outside the apprentice schools of which we have spoken in this chapter

Intelligence necessarily reveals itself as the course of study proceeds, so far as the liberal professions are concerned, it is measured purely in terms of academic success For the liberal professions there is no vocational guidance in the strict sense of the term the mental ability of the candidate and family circumstances determine whether he shall or shall not undertake university studies or some other form of higher education, but the suitability of a young person for a career as barrister, doctor, or teacher is almost entirely determined by the student's own predispositions, or by considerations of social status, or the amount of income that can be expected from a particular profession Even so, a career in one of the armed forces is an exception, here, physiological considerations are taken into account, and all candidates have to pass a medical examination

In Spanish society to-day women hold a place of very great importance All careers and professions are open to women, but even if it is not very clearly defined, there certainly exists a general measure of agreement as to which of the professions are more suited to men and women respectively The consensus of opinion on the choice of courses of training for young women has led to there being at least as many women students as men in the Faculty of Arts, while women are in a majority in the Faculty of Pharmacy For other types of career the percentage is smaller

Lastly, there is a tendency, and a very considerable one, for a state of equilibrium to be reached within any of the branches of the State services. This has the result of producing a very large number of candidates whenever there is a post to be filled in the public administration The candidates are usually young people who have a secondary education, but who, owing to lack of funds, intellectual shortcomings, or some other reason, have not succeeded in finishing a course of study for a professional qualification.

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SECTION V

JAPAN

Introduction

THE unstable conditions in China and Korea as well as the difficulty of obtaining reliable information on educational reconstruction in these countries has resulted in the limitation of this Far Eastern region to one country—Japan Here, although the totalitarian nationalist ideology was defeated, it has left its traces in the outlook and attitudes towards the social-educational problems. The historical class stratification is still accepted as the guiding principle for the distribution of labour and the structure of the school system It is true that the influence of the victorious democracies and the legal intervention of the American occupation authorities tend to promote a reform of education on democratic lines The military authorities, however, concentrate their attention more on the removal of obstacles than on positive democratic measures It is still questionable whether Japan will be able by spontaneous efforts to surmount its traditional contempt for the Western way of life The code of Bushido and absolute subservience to the Imperial house still permeate the Japanese society, and all American efforts to change the nationalist prejudices and the religious mythology of Japan may founder on the inherent contradiction of imposing democracy by military intervention.

EDITORS

CHAPTER ONE

JAPAN

ARE ALL GODS EQUAL?

The Political Basis of Selection

Two thousand, six hundred and ten years ago—if tradition is to be believed—there took place one of the two most important educational events in the history of Japan This was the enthroning of the first Emperor, Jimmu, at Kashiwara palace at the foot of Mount Unebi near what is now the city of Nara, on February 11th, 660 B C The other of these two events occurred on New Year's Day four years ago when Hirohito, the one hundred and twenty-fourth direct lineal successor to Jimmu, officially denied his divine origin in the annual New Year's Imperial Rescript Why were these monumental dates in education? What conceivable connection can they have with educational determination of occupational distribution?

Jimmu's ascension to the throne, as an historical event, can be regarded only with considerable scepticism The oldest extant Japanese historical sources are the *Kojiki* ("Records of Ancient Matters"), compiled by Ō-no-Yasumaro in A D 712, and the *Nihon-Shoki* (or *Nihongi*, "Chronicles of Japan"), compiled by Prince Toneri, third son of Emperor Temmu, and O-no-Yasumaro, in A D 720 Both of these were compiled principally from oral and traditional sources No chronology earlier than A D 460 can be considered trustworthy, and even Japanese scholars are prepared to admit that the enthronement of Jimmu is probably dated six centuries earlier than it should be But despite such historical doubt, this coronation, until recently celebrated as *Kigensetsu*, or Empire Founding Day, has had an enormous influence on every phase of Japanese life

According to the legend, Jimmu was a powerful clan chieftain from Hyūga in what is now Miyazaki Prefecture in the island of Kyūshu He is supposed to have sailed across the Inland Sea to Naniwa, modern Ōsaka, from where he set out on an expedition against the Yamato tribes in what is to-day Nara Prefecture Thus far the legend seems nothing more than the rather prosaic tale of a thousand other Pacific tribal chiefs. The thing which sets this myth apart is that Jimmu was supposed to be the fifth descendant of Amaterasu Ōmikami the sun-goddess, since he was the great-grandson of Ninigi, the grandson of Amaterasu who was sent by the sun-goddess to earth to found Japan. Based on this myth, the Imperial line which has come down to the present was presumed to be divine.

The islands of Japan, in this ancient creation myth, were supposed to have been formed from the coagulating brine which dripped from the point of a jewelled spear with which the first male and female gods, Izanagi and Izanami, reached down through the mists of Heaven and probed until they touched the sea The sun-goddess, Amaterasu Ōmikami, was supposed to have been created spontaneously out of the drippings from the left eye of the male Izanagi during his ablutions following the death of Izanami Similarly, a moon-god, Tsuki-yomi, was created from the drippings of his right eye, and ultimately an impetuous male god, or storm-god, known as Susano-o, was created from the drippings of his nose. Between the sun-goddess Amaterasu Ōmikami and this storm-god Susano-o there developed rivalry, discord, and antagonism, ultimately culminating in the banishment of the storm-god to an earthly nether-land which was probably Izumo, on the north or Japan Sea coast of Honshū Here he passed through an odyssey in which he married the daughter of the earth gods, begat eighty-one sons, and became the ruler of those tribes—which may have been the Yamato tribes Jimmu ultimately was destined to conquer

Here, then, are four enormously important points in the *Yamato damashii,* or fundamental psychological endowment which has been basic to the educational philosophy of Japan. The land was divine —for it was created by the gods Izanagi and Izanami. The Imperial line was divine—for it was a direct descendant of Jimmu, who was in turn a direct descendant of the sun-goddess Amaterasu Ōmikami. The people of Japan were divine—for they were either the descendants of Jimmu, who was himself divine, or of Susano-o, who was a god And pertinent to the theme of this paper, the people, although divine, were of different origins This last point could provide any essential, and very neat, explanation of the obvious ethnic differences in the Japanese people All were descendants of the gods, the *Kami*—but some were descendants of more favoured gods. The basis of occupational distribution had been set.

On the morning of November 5th, 1945, the educational authorities of the Allied Occupational Forces in Tokyo visited the First Demobilisation Ministry (*Fukuinchō Dai-ichibu*), and the Second Demobilisation Ministry (*Fukuinchō Dai-nibu*), which had replaced the old Ministries of War and Navy following the surrender of Japan. The purpose of these officials was to determine whether or not the Japanese had in fact closed all military and naval academies. It soon became apparent that these academies were closed and all military training was at a stand-still. The army schools had been closed by Imperial Army Ordinance No 116 of August 18th, 1945, signed by the Emperor in his capacity as Commander-in-Chief. The navy schools had been closed by Ministry of the Navy Order No. 1,500 of September 30th, 1945. But long

before the investigation was completed, the interest of the Allied educational officials had shifted to an apparently inconsequential item which appeared to have rather basic significance for educational policy. The officer personnel in the two Ministries were utterly different, so different, in fact, as to appear to be of two different nationalities The army officers were broad-faced, stocky, heavy-set, rather crude peasant types from Shikoku, Kyūshū, and the south of Honshū. The navy officers were slender, aquiline-featured, aristocratic types. Their speech was markedly different Their manners were immeasurably better Their intelligence—at least their technical proficiency—was strikingly superior. What was the basis of this obvious selection? Was it a difference in ethnic origin? Were these men—these descendants of the gods—the two different streams which had come down from Jimmu and Susano-o?

It was evident that a careful analysis of the entire mechanism for occupation selection should be studied in detail Perhaps this striking example of selection on an apparent ethnic basis might be duplicated in many other professions Were Japanese youths free to select their life occupation? Were artificial barriers of race, or class, or religion, or economic and social status preventing free choice? Was there a quota system?

But before this investigation was even well started, there took place the second of the two great events in Japanese educational history. This was the voluntary renunciation of his position as spiritual leader of the Japanese people by Emperor Hirohito on New Year's Day in 1946. He said in part

> We stand by the people and we wish always to share with them in their moments of joys and sorrows The ties between us and our people have always stood upon mutual trust and affection They do not depend upon mere legends and myths They are not predicated on the false conception that the Emperor is divine and that the Japanese people are superior to other races and fated to rule the world (Official English translation reproduced in the United States Department of State Publication No 2,671, *Occupation of Japan Policy and Progress*)

The Emperor's voluntary denial of divine origin was a repudiation of the basic racial theories of the modern Japanese State The origin of these theories was the philosophy of Motoori Norinaga and Hirata Atsutane known as *Fukko Shintō*, or literally, "Revival of Ancient Learning Shinto". This school of philosophy rose late in the eighteenth and early in the nineteenth centuries of the Christian era, as an ultra-nationalist rejection of foreignism, especially Chinese culture, and of the syncretism between the ancient primitive animistic cult of Japan, *Shintō*, and the Indo-Chinese religion of the Buddhist sects In rejecting the syncretism known as *Ryōbu Shintō* or "Double Aspect Shinto" the disciples of Motoori and Hirata reached back into the myths of antiquity which had been recorded in the *Kojiki*, the *Nihongi*, and a col-

lection of ancient poems known as the *Manyōshū*, and reconstructed as historic truths the legends of the divine origin of the land, the people, and the Imperial line It was inevitable that their zealousness should produce an element of nationalistic fanaticism, and this was seized upon by the early advisers to the Emperor Meiji as an effective instrument by which to stimulate the patriotism of the people and to whip them up to the emotional pitch necessary for them to make the great sacrifices inevitable during that period of frantic transformation from an agrarian Oriental economy to an industrial Occidental.

How could mystical, ultra-nationalistic philosophies based on a myth of divine origin be turned to the practical political purpose of perpetuating a regime and subjugating the masses of people to the intensive, almost intolerable sacrifices demanded in their industrial revolution? Two things were required a simple but appealing statement of relationship between the individual and the State, and an effective propaganda instrument to spread the belief

The simple statement of political dogma was relatively easy It was written by Yoshikawa Akimasa and after signature and proper ceremony was issued by Emperor Meiji on October 30th, 1890, as the *Imperial Rescript on Education,* the most fundamental document of all Japanese history After recounting a series of rather platitudinous virtues expected of the good citizen, it states

> . . and thus guard and maintain the prosperity of Our Imperial Throne coeval with heaven and earth So shall ye not only be Our good and faithful subjects, but render illustrious the best traditions of your forefathers

The school was selected as the instrument to be used to mould the people to this doctrine Wilfred Fleisher, in his book *What To Do With Japan* (New York Doubleday and Co., 1945), wrote "The Japanese educational system is in reality a photographic process. It consists in making an official negative and turning out millions of prints of it" And within the school two devices were chosen official policy statements, to be used as guides for the teachers, and the course in Japanese ethics known as *Shūshin,* to be used as the vehicle of instruction

On March 30th, 1937, the Ministry of Education published its great pre-war policy document, the *Kokutai no Hongi* or "Cardinal Principles of the National Entity of Japan", which had been compiled by a committee in the Thought Control Bureau and had been edited by Itō Enkichi, who was then Chief of that bureau and later the Vice-Minister of Education. This document, and a less carefully prepared sequel known as the *Shimmin no Michi* or "Way of the Subject" published in 1941, in effect canonised the most extreme of the political theories of Motoori and Hirata—theories which accepted as historic truth the ancient creation myths. The *Kokutai no Hongi* held that the Emperor "is descended from an

unbroken line of sovereigns ", and " that the offspring of Amaterasu Ōmikami accede to the Throne from generation to generation is a great law which is for ever unalterable." Upon this basic assumption of a divine sovereignty the official Japanese philosophy of state inexorably drew the logical conclusion that the Japanese citizen existed solely for one purpose, that of perpetuating the existing political regime and of serving the Emperor.

Some of the propaganda methods were extremely effective. Most Japanese, whatever their religious faith, are profoundly influenced by Confucian philosophy and particularly by the concept of filial piety. Repeatedly, the *Kokutai no Hongi* and the *Shimmin no Michi* linked the feeling of filial piety for ancestors with a feeling of reverence and devotion to the ancestors of the Emperor, and through this sense of reverence they drove home the point that the Japanese subject lived only to serve his state The poem by Sakura Azumao, quoted frequently by the Thought Control Bureau and included in the chapter entitled, " Loyalty and Filial Piety as One " in the *Kokutai no Hongi,* will illustrate this dramatically

> Precious are my parents that gave me birth,
> So that I might serve His Majesty

The Japanese Ethics, or *Shūshin*, were taught in all elementary school grades and in the lower section of the middle school. Here the doctrine was put in a simple way that the children could understand—or at least parrot until they developed an unthinking emotional bias The opening paragraph in the final chapter entitled " A Good Japanese ", in the book for the fifth grade, will serve as an example

> Our great Empire of Japan has been ruled by an unbroken line of Emperors, and the generations of Emperors have cherished us, the subjects, as Their children, and we, the subjects, have united our hearts and devoted Ourselves well to the Way of Loyalty and Filial Piety ever since the time of our ancestors And inheriting the aims of our ancestors, we must devote ourselves to the Way of Loyalty and Patriotism, always looking up to and venerating the Eminent Virtue of the Emperor, the Empress, and the Empress Dowager The Way of Patriotism and Loyalty, if one stands in the presence of the Sacredness of The Sovereign and the country, is for the whole nation to work with a single mind at public service—in normal times always following the Imperial Will, each working hard at his own occupation and exerting himself for the improvement and advancement of the country

When in the opening hours of 1946 the Emperor denied his divinity, he rejected not only the myth of his descent from the gods, but also the entire structure of political theory which had been erected on this premise. The old *Constitution,* granted by Emperor Meiji in 1889 as a political concession to quiet the democratic radicals of his day, would no longer serve Its opening article read· " The Empire of Japan shall be reigned over and governed by a line of Emperors unbroken for ages eternal." And

the third article said: "The Emperor is sacred and inviolable." On November 3rd, 1946, the new *Constitution* of Japan was promulgated, and on May 3rd, 1947, it became effective. The first article of the new Constitution reflects the changed position of the Emperor:

> *Art I* The Emperor shall be the symbol of the State and of the unity of the people, deriving his position from the will of the people with whom resides sovereign power.

And with specific respect to education and the choice of an occupation, the new Constitution states

> *Art XXVI* All people shall have the right to receive an equal education correspondent to their ability, as provided by law All people shall be obligated to have all boys and girls under their protection receive ordinary education as provided for by law Such compulsory education shall be free
>
> *Art XIV* All of the people are equal under the law and there shall be no discrimination in political, economic, or social relations because of race, creed, sex, social status, or family origin Peers and peerage shall not be recognised No privilege shall accompany any award of honour, decoration, or distinction, nor shall any such award be valid beyond the lifetime of the individual who now holds or hereafter may receive it

The political basis of occupational selection—a basis established more than twenty-six centuries ago in the mists of legendary times—has been ended No longer is the Japanese citizen merely a pawn to be moved at will by the Government in support of a political policy and in perpetuation of an avowedly divine and unalterable Imperial dynasty. But before this fundamental shift in political philosophy there had to be mechanisms by which the actual manipulation of the human pawns took place. Have these mechanisms survived? Is the Japanese student still as inexorably placed in his occupation role as he was before the defeat and occupation of Japan? Is he, in fact, completely free to choose any career and to receive any education correspondent to his ability?

The Traditional Limitations on Mobility in Society

What were the causes of the marked difference in the officer personnel in the two Demobilisation Ministries? It has long been popular in Japan to say that the selection was made on the basis of affiliation with rival clans—the Chōshū were traditionally army men, and the Satsuma were traditionally navy But this, while it has a grain of truth, is a decided over-simplification The most fundamental element in the selection pattern for the military services was an economic one The sons of poor peasants, and to a lesser degree the urban labouring classes, have in the past had little possibility of breaking out of their economic strata except through military service. In the military academies they could find free education, subsistence during the long years of training, and an

occupational ladder which by-passed the insurmountable economic and social barriers of civilian life. There can be little doubt that in a considerable measure Japan's insane and suicidal policy of world aggrandisement after the political *coups* and assassinations of the middle 1930's was directly caused by the fact that the military clique, the *gumbalsu*, were in power. And the military clique was composed essentially of untutored peasants with an entirely distorted sense of their own power as a result of their limited military education and foreign service The selection pattern which in a major measure determined the choice between the services was one of technical limitations. The academic requirements for the naval academies was considerably higher than that for the military academies, partly due to tradition, partly due to the technological requirements of the two services. Finally, social status played a considerable role. The navy was considered a more refined and cultured service, and the families which prided themselves on their cultural heritage preferred sea duty to land

What was true of the choice of military careers is equally true of the other occupations. There are, in all, three basic elements of limitation of social mobility structural limitations, technical limitations, and social limitations

The Structural Limitations

The most obvious of structural limitations on freedom in occupational choice is the imposition of a quota system. Perhaps the best example of this method of controlling the number of students preparing for professions is that given in the 1936 Hirao plan. The Minister of Education in 1936 was a prominent businessman, Mr Hirao Hachisaburō His tenure of office coincided with a critical and widespread unemployment due to the world depression, which was severely felt in the highly industrialised home islands of Japan. Only seventeen thousand of the thirty thousand university graduates in 1936 were able to get employment, but the technical schools fell far short of filling the seventeen thousand six hundred skilled technicians needed by industry—graduating only slightly more than 16 per cent. of that number. To an Occidental educator with a longer experience in industrialised society, and especially to the Anglo-Saxon educator who considers the occupational aspect of education as only one of many equally important elements, this situation would present many complex alternatives. The technological needs of an industrial society could not be met by radically shifting the quota of students each time there was a fluctuation in the business index. University graduates are presumed to add to the cultural resources of a nation, irrespective of whether or not they immediately find gainful employment in the field of their specialisation. To the 1936 Ministry of Education, however, steeped in the concept of the individual as merely an element in the

State machine, there appeared to be an obvious cause and an equally obvious cure. Too many university students were being prepared for white-collar and professional jobs and too few technicians were being trained for the skilled trades The solution was a proposed structural shift which would have eliminated many higher schools and imposed a quota upon the remainder, while reorienting the secondary level schools towards practical terminal courses in technical subjects.

Prior to the Hirao plan the Japanese school system had been composed of six-year compulsory elementary schools (*shō gakkō*), followed by secondary schools (*chūtō gakkō*), which were four- or five-year preparatory schools, then by higher schools (*kōtō gakkō*) consisting of three years of post-secondary university preparatory work, followed by the universities (*daigaku*)

The Hirao plan contemplated increasing compulsory education from six to eight years while extending the entire system of compulsory education from six to ten years, composed of two cycles, the first being essentially the old *shō gakkō*, while the upper elementary cycle would be a four-years "higher elementary school" (*kōtō shō gakkō*) The plan proposed that the secondary schools would be reduced to a maximum of five per prefecture, making a total of approximately 250 as compared with the 563 boys' and 996 girls' secondary schools then existing Those permitted to remain would be cut to three years. To compensate for this drastic reduction in students preparing for the professions, it was proposed that a system of parallel secondary-level institutions offering terminal courses in commercial, industrial, and agricultural subjects be established The old higher school was to be cut from three to two years in length, thus making a total of only five years' pre-university preparatory study as compared with the former seven or eight The private universities were to be drastically cut in number—a possibility in the Japanese system where all institutions depend upon the Ministry of Education for legal existence—and the remaining institutions were to be decentralised on a geographical basis to reduce the competition for admissions

The Hirao plan was never implemented—but its failure was not due to a rejection of this planned or quota system of education for the professions It was rejected because the estimated additional cost of 42 million yen—approximately 7 per cent. of the then current educational budget—was considered an insane extravagance The plan presents in retrospect, however, a perfect example of the method by which the preparation of students for the professions could be controlled by a structural limitation

The Japanese educational system is a fairly faithful copy of the French system of administration, and has been one since the writing of the famous *Educational Code of 1872* Yamashita Tokuji in his book *Education in Japan* (Tokyo, Kenyūsha, 1938) writes:

The French system was followed because its strong policy of centralisation attracted the attention of the Meiji Government, which desired to unify the education of the nation

This strong policy of centralisation has made possible rapid shifts of a major character, some of which were designed to sort out the students into predetermined categories and quantities for job placement. One such change was the National School Reform of 1941, which, while it was primarily a curriculum and ideological reform aimed at developing an increased spirit of nationalism, at the same time raised the compulsory school level to eight years, breaking the elementary school into a lower cycle of six (*kokumin gakkō*) and an upper terminal cycle of two (*kōtō kokumin gakkō*)

The French-type structure of the Japanese school system has offered a number of other structural limitations to free occupational choice It has had the familiar system of periodic examination hurdles—the most severe being at the end of the secondary school for admission to the higher school, with a lesser one at the termination of higher school for admission to the university It has had the familiar system of fees—though these have been relatively small and probably did not exclude students whose economic status would have permitted them to delay entering gainful employment Thus, for example, following the surrender of Japan, the maximum annual tuition fee in an Imperial university was approximately the equivalent of 10 dollars American currency (150 yen in 1945), and less than half that in the best public secondary and technical schools (62 yen in Kanagawa Prefecture) Elementary school children paid from 2 50 to 10 00 yen per year for books—less than one dollar American currency Even this slight barrier is now removed The Educational Reform of 1947, as established by the Fundamental Education Law (March 31st, 1947) and carried out in compliance with the recommendations made by the United States Education Mission to Japan (March 30th, 1946) and the Far Eastern Commission's "Policy for the Revision of the Japanese Educational System" (March 27th, 1947), makes education through the nine grades compulsory Article XXVI of the new *Constitution* provides that such compulsory education shall be free

One of the most criticised elements of any dual-type educational system such as has existed in France is the necessity that students shall make their occupational choice at a very early age, long before they have matured to the point where their professional aptitudes have made any marked appearance. The liberal French educators who drafted the Langevin Reform of 1946 in France recognised this weakness and recommended that it be corrected by a method of passing from one type of school to another at various levels in the educational career This weakness in the prototype has long been recognised in Japan, and tentative attempts have been made to

correct it. Thus on April 1st, 1935, there was created by Imperial Ordinance a youth school (*seinen gakkō*) which was to serve as a continuation school for young men who had completed the elementary but were not qualified or not able to continue in the secondary. The *kōtō shō gakkō* or higher elementary school advocated as a part of the compulsory programme in the Hirao plan of 1936 was an integral part of the pre-war system, although it was not made compulsory until the 1941 National School Reform, when it was reduced to two years and renamed the *kōtō kokumin gakkō*.

While these structural additions to the normal academic progression from the elementary school to the university were adopted to give terminal courses to people who could not aspire to continued formal education, the reverse was not true. There was no structural modification contemplated which permitted a gifted student whose ability became apparent later in his development to shift from the terminal technical course to the academic preparatory course. It is true that an infinitesimal number of brilliant students could enter the university, regardless of their prior academic preparation, by passing a competitive entrance examination Virtually, however, there was no cross-transfer The United States Education Mission, on March 30th, 1946, made as one of its fundamental recommendations that the various competing schools be unified into a three-years "lower secondary school" which would provide general education, including vocational and educational guidance, to be followed by an "upper secondary school" in which the various technical and preparatory courses for students of both sexes would be offered and relatively free transfer between them would be permitted This, of course, was an out-and-out recommendation for the composite- or multilateral-type secondary school—a recommendation entirely in keeping with American theories of democratic government, but something of a radical move from Japanese or European viewpoints It was made specifically to eliminate the existing structural limitation upon free choice of occupation—a limitation considered undemocratic In commenting on the Japanese plan for implementation of the Mission's recommendation, the Allied Headquarters stated in a Press release dated January 20th, 1947

> A new School Education Law has been proposed by the Ministry which will define the nature of the new school system Gone is the old pattern of one set of schools for the select few from the privileged class while the masses of students received a different and inferior education Common, general education will continue through nine years, rather than the six now in practice, and this common schooling will be compulsory Entrance to the upper reaches of the school system will no longer be restricted to the privileged class, but will be open on an equal basis to all students
>
> While it is true that limited facilities will require selection of those who go beyond the ninth year, the methods of selection have been democratised by increasing the number of students who can be accom-

modated, and developing methods which will result in the selection of a better type of student in higher institutions of learning.

This school Education Law was passed by the Japanese Diet on March 29th, 1947, and was put into effect with the beginning of the next academic year on April 1st, 1947 It is too soon to appraise the new law with regard to its practical application. But the avowed policy which led to its enactment is indeed fundamental and constitutes a major structural change in the direction of freer choice of occupation

There has occurred one other structural change in the post-war Japanese educational system which should have a very great influence on the choice of professions This, which might well be considered both a social and an administrative change, is the granting of educational equality to women

On social grounds women have been granted complete equality with men The new *Constitution,* as already noted, states in Article XIV that all people are equal under the law and there shall be no discrimination in political, economic, or social relations because of sex. Article XV states that universal adult suffrage is guaranteed with regard to the election of public officials But most striking of all is Article XXIV, which says

> Marriage shall be based only on the mutual consent of both sexes and it shall be maintained through mutual co-operation with the equal rights of husband and wife as a basis With regard to choice of spouse, property rights, inheritance, choice of domicile, divorce, and other matters pertaining to marriage and the family, laws shall be enacted from the standpoint of individual dignity and the essential equality of the sexes.

This can only be considered a social revolution The place of women in pre-war Japanese society has frequently been romanticised or exaggerated in Occidental accounts The inevitable levelling influence of the industrialisation of Japan was already being noted in all the urban areas, long before the war or the post-surrender reforms. But there can be little doubt that the Japanese woman was, and despite the provisions of the new *Constitutions* is likely to continue to be for some time, seriously discriminated against. Her position was largely based on the Confucian conception of the inferiority of women and upon the feudal pattern expressed in the *Onna Daigaku* ("The Greater Learning for Women"), compiled from the famous *Dōshikun* written by Kaibara Ekken two and a half centuries ago One of the basic maxims of this work has been quoted so frequently as to become almost social dogma "Woman must look to her husband as her lord and must serve him with all reverence and worship"

The Japanese educational authorities were well aware of the undemocratic situation with regard to women's education long before the Allied Occupation Forces exerted pressure to secure reforms.

They knew that the humiliating double moral standard, the inability to hold real property, the abandonment after trial marriages in which the religious ceremony was performed but the act was not recorded at the local government office, the drudgery of household tasks, and the intellectual sterility of the average home, the arranged marriages utterly devoid of love and frequently even of acquaintanceship—all these were paralleled by an inferior status in education. The secondary schools for girls (*kōtō jogakkō*), the women's normal schools (*joshi shihan gakkō*) and the women's higher normal schools (*joshi kōtō shihan gakkō*), and the women's colleges (*joshi semmon gakkō*) were all notoriously inferior to the equivalent rank of boys' and men's institutions On December 4th, 1945, the Ministry of Education issued "The Women's Education Renovation Plan" which has since been the basic blue-print for reform in this area The portion pertinent to this study is quoted

(1) (*a*) Regulations impeding women from entering higher educational institutes will be revised or abolished women's universities will be newly established, and the co-education system will be adopted in men's universities

(*b*) Graduates of women's colleges designated by the Education Minister will be made eligible for universities

(*c*) Some of the now existing women's colleges will be elevated to the status of women's universities

(2) The creation of women's higher schools will be considered later For the time being, however, the course of study of women's colleges and the graduate course of girls' high schools will be elevated to that of men's higher schools

(3) The course of study of girls' high schools will be elevated to the standard of boys' secondary schools Textbooks will be unified

(4) The subjects and the number of school-days of young women's schools will be made equal with those of young men's schools

(5) University and college courses will be open to women To uplift the intelligence of both men and women, courses on politics and science will be enlarged

The Technical Limitations

The second major type of limitation imposed upon the free selection of occupation is that of technical limitation to the mobility of society The Anglo-Saxon nations are familiar with this type of limitation through such things as the traditional requirement of a knowledge of Latin for admission to the university or the formal academic requirements imposed by the College Board Examinations. In Japan there has in the past been a corresponding pattern of technical requirements which have limited entrance to schools and to professions on a somewhat arbitrary basis. Perhaps the most interesting, and certainly the most far-reaching, of such technical limitations has been that of the written and spoken language.

It has been frequently charged, both by Japanese and by Occidentals, that the ruling classes have deliberately manipulated the language to make it difficult, with the intention of thus eliminating

possible competition from the masses who are economically unable to afford the consequent lengthening of schooling to acquire the skills of reading and writing Less than two months after the Occupation of Japan began, the Director of the Japanese Romanisation Society (*Nippon Romaji Kai*), a powerful if somewhat zealous linguistic organisation dedicated to the writing of Japanese in the Latin alphabet, wrote to the Allied Headquarters

> Driving out Chinese ideographs from daily use will benefit every class of our people The military, however, were blind to this fact They kept low the cultural standard of our people in order to drive them in whatever direction they might choose Indeed the learning of Chinese ideographs was quite sufficient to keep and develop the feudalistic tendency of the people, that is the tendency of obeying unconditionally the established authorities

Whether or not the language was deliberately manipulated has not and probably never can be conclusively proven There can be little doubt, however, that it did serve as an enormous cultural obstacle which effectively limited free choice of occupation and social mobility The limitation imposed by language was of two types a multiplicity and difficulty of styles, and an enormous burden on the memory in mastering a usable fraction of the nearly fifty thousand ideographs in which it was written. Both of these required intensive and prolonged schooling if the student were to achieve a level of linguistic command sufficient for him to be a critical student of any discipline Such prolonged schooling was impossible for any but children of the economically favoured classes Despite one of the highest relative educational budgets of any modern nation, and a technical efficiency in educational processes which was outstanding, Japan had a disastrous attrition rate in its upper levels of education—only approximately 14 per cent of the population going on to any type of schooling beyond the elementary level.

In pre-war years Japanese schools devoted 42 per cent. of the time in the compulsory elementary schools to formal instruction in the skills of reading and writing C H Mann, of Teachers College Columbia University, in 1928 made a study of then-existing practices in elementary schools of the United States and found that in the first six grades—comparable to the compulsory system in Japan—only 19 per cent of the time was spent on learning to read and write. Japan's minimum school year was 235 days, or approximately 30 per cent. greater than the standard 180-day year in the United States Japan enrolled 99 77 per cent. of children of compulsory school age in the schools and had an average daily attendance of 97 9 per cent—while the United States in comparable years enrolled 95 3 and had an average daily attendance of 84 2 per cent Japan spent 2 3 per cent. of its total national income on tax supported education—the United States spent 3 6 per cent. The

Japanese had an average teacher-pupil ratio of 39 2 while the United States in the corresponding period had 29 5 Japan had a compulsory teacher training requirement for certification which was equal or superior to the individual State requirements in one-third of the United States in 1937

With such an astonishing devotion to education, Japan would seem to have an extremely high literacy rate On a purely technical basis, this was and is true Japan has long claimed that 96 6 per cent. of the adult population is literate, basing this claim on the extremely high percentage of enrolment of compulsory school-age populations But this is only a formal, not a functional literacy. In actual tests carried out in fourteen factories in the key industrial area of Tokyo, Kanagawa, Chiba, and Saitama Prefectures in 1946, it was found that only 19 per cent of the women and 36 per cent of the men who had had only the compulsory schooling required by law could read simple news stories with understanding—and that of these, who represented the 86 per cent of the total population which did not go on to secondary and higher education, only 52 and 56 per cent respectively could read the same material

The total Japanese language is written with characters selected from the fifty thousand known Chinese logographs plus an addition of one of the two major phonetic syllabaries or *kana*, which have forty-nine symbols and two diacritical marks. Two of the most commonly used dictionaries, the *Daijten* and the *Jigen*, have 14,924 and 10,373 of these ideographs (not words) respectively. University textbooks are written in an ideographic range of about eight thousand to nine thousand The Japanese Diet used 4,052 different ideographs in recording its first twenty-five sessions The Tokyo newspapers in 1935 indicated that over a month-long span of news, 3,542 different ideographs were used The *Nihon* Japanese typewriter has 2,005 ideographs plus a reserve of 858 in the rare-type drawer The schools, on the basis of extensive character counts similar to the word-counts in English reading and to repeated efforts on the part of the newspapers to limit themselves to a restricted number of Chinese characters—for example, the *Asahi* list of 3,307, the *Nichi* list of 2,528, and the Ministry of Education 1943 list of 2,749—have attempted to teach only the most essential of these ideographs. In 1935, for example, they taught only 1,356. Yet a study of the graduates of the compulsory school system in the city of Tokyo in the same year showed that the median graduate was able to read only six hundred, and that only 15 per cent.—the residue which would presumably go on to secondary school—could read more than one thousand. Yet in spite of this deplorable showing, so deficient was the arbitrarily restricted list of 1,356 ideographs in actually expressing the full range of ideas necessary in a newspaper or general-interest article, that the Ministry of Educa-

tion was forced to raise the minimum standard list to 2,669 again in 1942

There were three essential difficulties involved in the Japanese language, and each of these constituted a valve by which it was possible—deliberately or unconsciously—to limit further schooling and hence free choice of occupation. The first was that of style The second was that of the number of logographs in which the several levels of materials had to be written. The third was the complication of the writing system itself

Japanese can be written in four common styles and innumerable variations The four common ones are vernacular style (*kōgotai*), literary style (*bungotai*), epistolary (*sōrōbun*), and Chinese classics style (*kambun*) The student who will go on to the university level must learn all of them The student who goes to the secondary school must learn at least the first three and probably have a smattering of the last The elementary school student learns only the first, but before the war had a smattering of the first three. These styles are so different that a reading knowledge of one does not ensure a reading knowledge of any of the others—and in fact the last three are relatively unintelligible when read aloud to any but a very erudite audience One of the major social reforms which has taken place in the Allied Occupation has been the voluntary decision on the part of the Japanese to restrict their public writings to the first, or simple vernacular (*kōgotai*), which can be understood, so far as style is concerned, by anyone who can speak Japanese Thus, the new *Constitution* is written in *kōgotai* And the Emperor's Imperial Rescripts since the famous one of New Year's Day, 1946, in which he denied his divinity, have also been in *kōgotai* Truly these are social milestones, and equally major steps towards a free choice of occupation

The enormous number of logographs (*kanji*) which are required to write anything above the simplest communication level in Japanese, has already been noted Since 1923 the Japanese have made repeated attempts to restrict this number—one of the most recent being an official Ministry of Education decision on February 20th, 1946, to restrict all elementary textbooks to the 1,134 list prepared by the Society for the Investigation of the National Language (*Kokugo Shingi Kai*) in 1942 Actually, no attempt was made to restrict the textbooks to this list, and on April 28th, 1946, a new list—this time of 1,295 ideographs—was tentatively adopted. In November this was increased to 1,850, which were to be used in all official publications, and a very limited list of 881 was approved by the Japanese Cabinet in December 1947 for use in the school textbooks It is obvious that no such arbitrary limitation can ever be really successful Although there is no conscious attempt to limit words, but only symbols, the difficulty of arbitrarily restricting the

writing to a predetermined list is somewhat similar to that experienced in restricting the writing of complete English to the limited word-list of Basic English

The third difficulty, that of the extreme complexity of the writing system itself, can be only briefly mentioned Standard Japanese—and not the something like thirteen other methods of writing Japanese—can be written solely in the Chinese logographs (*kanji*), in the phonetic syllabaries (*kana*), or in any combination of these There are five types of the logographs in common use—three of which must be learned by any student who goes into the secondary school or beyond, the block form (*kaisho*), script form (*gyōsho*), and "grass writing" form (*sōsho*) A scholar may have to recognise as many as a hundred and three different forms. Each of these is written with a number of different brush strokes—ranging from a single one to as high as forty-eight, with twenty being relatively common Each logograph, either alone or in compounds, may be read with from two to a maximum of eighty different sounds, with five being relatively common These sounds may represent a Japanese word, a Chinese word or any of from three major epochs of Chinese history, or an Occidental foreign loanword The phonetic syllabary (*kana*), which may or may not be interspersed in the running text, is normally either a print form (*katakana*) or a cursive form (*hiragana*), though it may on occasion be a somewhat poetic form (*hentaigana*) or an ancient type composed of Chinese ideographs which do not stand for meaning, but only sounds (*manyōgana*) So difficult is the resulting system that it is common to include a running inter-text, known as "sidewriting" (*furigana*) to explain the most difficult portions, although an analysis of Japanese newspapers for the past twenty years has shown a marked decrease in this practice, partly due to the increased cost, partly due to an official policy of the pre-war militarist Government Thus, for example, the *Asahi*, Tokyo's leading newspaper, between 1926 and 1946 reduced its *furigana* from 52 per cent of the running text to 9 per cent This paper now has eliminated all *furigana*

There is basically only one reform which will solve this enormously complex linguistic, economic, and sociological problem That is the adoption of some phonetic system of writing For practical reasons the choice is limited to one of the traditional syllabaries (*kana*) or to one of the various romanised forms (*romaji*) The United States Education Mission in its March 30th, 1946, report to the Supreme Commander for the Allied Powers made a powerful recommendation for the adoption of *romaji* as the common writing-system of Japan In justifying this extremely fundamental and far-reaching recommendation they said in part

> we recommend a drastic reform of the Japanese written language Clearly the question of language reform is basic and urgent It casts its shadow over practically every branch of the educational pro-

gramme, from the primary school to the university If no satisfactory answer can be found to this problem, the achievement of many agreed-upon education goals will be rendered most difficult

Despite an official position of "neutrality" on the part of the Allied Occupation Forces—a position which in fact exerted an extremely powerful pressure upon the Japanese to do nothing of significance in this area of reform—on February 28th, 1947, the Ministry of Education announced that with the beginning of the 1947 academic year the teaching of *romaji* could be made a part of the official school programme on a voluntary basis Over 90 per cent of the elementary schools elected to teach it as a special skill subject With the beginning of the 1948 academic year, this experiment had apparently proved so successful that eighty-six schools requested and secured permission to teach all school subjects in *romaji* as the vehicle of instruction This experiment, if successful, may well prove to be the most significant educational project in the Orient in the past century—comparable only with the introduction of Western learning under the Meiji Restoration and the original introduction of a writing system from Korea by Wani, tutor to Prince Wakuiratsuko, traditionally dated as A D 285

The Social Limitations

Although social limitations on mobility are the most tenuous and ephemeral, they are still the most powerful limitations which a society imposes In pre-war Japan there were four major areas limitations based upon race, upon class, upon ideology, and upon prestige. Each of these has been modified by the Allied Military Occupation, but each in some degree remains

Japan has had a remarkably homogeneous population in so far as race is concerned There is only one basic indigenous race which differs from the so-called "pure" Japanese—the *Ainu,* or bearded, blue-eyed Caucasian aborigines of Hokkaidō In addition to these there has been a considerable minority group composed of immigrants from Korea who have settled in all parts of the four home islands, with a concentration in the northern island of Hokkaidō, where they have worked in the mines. There has always been a relatively large group of Chinese living in Japan—38,724 Chinese students studied in Japan between 1927 and the end of the Second World War, for example—but all other national groups combined constituted only a very small element in the total population of the nation, composed almost entirely of diplomatic personnel, a few missionary families, and foreign representatives connected with commercial firms Discrimination on the grounds of race, if it were to be used as an instrument for the limitation of occupational choice, would have to be very largely concerned with only two groups, then, the *Ainu* and the Korean

The *Ainu* to-day probably number fewer than ten thousand, and

of this number a very large percentage are of mixed Japanese and *Ainu* race They have adopted Japanese clothing, speak the Japanese language except on rare occasions in their homes and in traditional *Ainu* festivals, such as the annual Bear Festival, when the males drink the raw blood from the heart torn from one of the sacred Hokkaidō bears It is true that in one or two of their main villages, such as Shiraoi Mura, near Noboribetsu in Hokkaidoō, they tend to be forced into the same occupation—in this case fishing—but that is obviously due to their geographical situation rather than any racial discrimination Those who have left their tribes and gone out into the larger world of other parts of Japan appear to have equal job opportunities with the rest of the population Several have run for and even won seats in the national Diet, such as Samo Kikuzō from Toyoura Mura in Hokkaidō, who relinquished his claim to a seat in the lower house of the Diet in 1947 to run for Governor of Hokkaidō Although he lost, he won an astonishing number of votes, considerably larger than the total *Ainu* population

The Koreans before the Second World War had had about four decades of free admission into Japan and were in most of the home islands relatively well assimilated Some even passed for Japanese They were citizens with full legal rights, and many of their children did not even realise that their ethnic origin differed from that of other Japanese students With the end of the Second World War and the prospect of a liberated Korea, there arose a tremendous spirit of nationalism, much of which was deliberately aroused by foreign agitators The Allied Powers, by Order MGTMG 014 33 of February 23rd, 1946, forcibly repatriated all Japanese nationals from Korea and gave the Korean nationals in Japan the choice of repatriation to their new nation of Korea or of remaining in Japan The human tragedies which this forced migration caused among families which for nearly half a century had considered that the land on which they lived was their permanent home need not be developed here. The effect of this move on the national loyalties and emotions of the Korean population in Japan is, however, pertinent. A surprising proportion of the Koreans elected not to return to Korea—which offered them even less economic and political security than they enjoyed in Occupied Japan But the constant nationalistic propaganda with reference to a liberated Korea stirred in them a belligerent attitude which on two occasions led them to outright revolts against not only the authority of the Japanese Government but also against the Allied Occupation Authorities as well—the first in the mining area of Hokkaidō, the second over the question of school regulations in the Kansai area of Honshū. At least a militant minority of the Koreans in Japan are apparently determined to try to retain the advantages of their present status of residence in Japan, while

establishing a new status of being a foreign resident. The effects of this changed attitude are not yet fully apparent, but it seems clear that if it continues there will develop in Japan a vocal and belligerent minority group which will inevitably draw upon itself occupational restrictions and discrimination

The second area of social limitations on employment has been that of class Japan has never had a true caste system, but for more than a thousand years there were fairly well-defined social classes In the Tokugawa Shōgunate which immediately preceded the Meiji Restoration, the class structure was usually called the *shi-nō-kō-shō* (warrior-farmer-artisan-merchant) in this descending order of merit To this, or to any other classification of the classes, there was added an upper or peers class (*kazoku*), and a lower or untouchable class (*eta*), which was sometimes called the *hinin* or "not human" What occupational discrimination, if any, is still connected with the descendants of these two extreme groups, now outlawed?

The position of the *eta* has long been the subject of much social reform, and is a matter of repugnance to all right-thinking Japanese at all levels of society. They were segregated into villages, were not permitted to marry anyone outside their class, were restricted to certain occupations considered defiling in the Shinto religion, such as undertaker, tanner of hides, butcher, and sanitarian. Horrible myths designed to prove that they were not human, folk-legends about the hairiness of their bodies and their animal tails which they kept hidden in their filthy garments, were used to maintain the horror and loathing with which the remainder of the population viewed them Their legal emancipation came as a result of just such an incredible folk-legend In 1869, when Japan was in the process of being systematically surveyed, the problem of standardising the *ri*, or Japanese linear measure equal to 3 927 kilometres, was discussed. The problem of whether or not the segrated *eta* villages should be included in the computation of distances became a burning issue Did measured space end at one edge of the village and begin again at the further limit? The *Kōgisho*, or assembly of the representatives of the feudatories, voted 175 to 26 in favour of investigating the whole question of the *eta* and settling it before standardising the *ri* In 1871, the Meiji Government by its 61st decree emancipated the *eta*

From this legal freedom to general social acceptance is a long step, however, and for the next seventy years there were innumerable clashes between the liberal and Government elements and the conservatism of the Japanese population One of the strange bits of pre-war Japanese history is the continued campaign which the military clique and the Thought Control Bureau of the Ministry of Education—two organs which to Occidental eyes appear to be the ultimate in conservative and reactionary totalitarianism—

waged in support of these poor debased people By Order No. 22 of October 30th, 1932, all schools were commanded "to teach a feeling of mutual respect." By Order No 24 of August 29th, 1935, discrimination against the *eta* was condemned as "an evil practice of inequality among the Japanese which does grave injury to the harmonious co-operation of the whole nation" By Order No. 24, of August 29th, 1938, all persons connected with education were commanded to root out the "abominable and evil practice of discrimination" which still existed in some parts of the country Even during the process of the war there were similar efforts to combat the popular prejudice

To-day there does not exist any outward discrimination against the *eta* None is permitted by law—both Japanese law of pre-war date and by Occupational directives such as the famous SCAP Directive of October 4th, 1945, known as the "Japanese Bill of Rights" But there still does exist, especially in rural communities, a powerful hidden prejudice against the class Practically no respectable Japanese would marry an *eta* if the class of the other were known It is true that people of *eta* origin have and do hold the highest political and economic positions, but in almost every case their *eta* origin is not generally known Even the use of the word *eta* or *hinin* is banned Few Japanese will admit that they know any person who is of *eta* origin, and even to mention the word in the hearing of people of that class would probably cause a riot Under such conditions, a degree of occupational discrimination is inevitable, though concealed.

Japan has had a noble class, drawn from the warrior group, since prehistoric times. But a formal nobility, based on the European model, dates only from the Meiji Restoration, when the new Government adopted this device to gain unity and national loyalty from the molecular society of warring feudal clans who in August of 1871 were asked to give up their feudatories and pledge allegiance to the Emperor. There quickly grew up a concentration of court officials and peers (*kazoku*) who needed schools for their children As a result a school was opened in Kanda, Tokyo, in 1877 by the peers, who contributed to its cost and support This school was really the *Gakushū-in* or Peers' School which had been founded in Kyoto in 1847 for the children of court officials and had been moved to Tokyo and then temporarily closed in 1869 with the Meiji Restoration In 1885 there was founded a girls' school in Tokyo under the name *Kazoku Jogakkō*, which in 1906 was made a part of the peers' school In 1918 it was separated from the boys' school and renamed the *Joshi-Gakushū-in*, located in Akasakaku, Tokyo This is what is known as the Peeresses' School It also was an ordinary private school, supported in part by contributions from the founding peers, in part by student tuition, and in part by contributions from the Imperial

Household—these latter, of course, ultimately coming in considerable measure from some form of taxation

Superficially these two schools—the *Gakushū-in* and the *Joshi-Gakushū-in*—would appear to offer a convenient device for limiting occupational opportunity to a particular social class. Actually they probably do no more than offer an exceptionally good—and democratic—course of studies, which makes their students that much better prepared for success in the free competition for admission to higher institutions and ultimately to better jobs In 1945 only 32 per cent of the boys' school were sons of peers and 68 per cent were sons of commoners In the girls' school at the same time the ratio was almost exactly fifty-fifty. The student fees, while high enough to bar many gifted commoners and, incidentally, many impoverished peers, were not particularly excessive compared with other private schools offering comparable work There was no quota system for admission, though the free access to commoners was not widely publicised

The new *Constitution,* on May 3rd, 1947, formally abolished the system of peerage by its Article XIV, and since that time both the class, and the schools which have largely catered to the children of the class, have ceased to have any open or formal selective action in determining future employment on a class distinction That there remains an informal and personal predisposition to employ the children of friends who formerly were members of their own group, seems inevitable

The limitation of occupation through religious or ideological means can quickly be disposed of Before the Second World War, all citizens of Japan were by law required to accept the quasi-religious "official national cult" of *Kokka Shintō* (National Shinto), which was sometimes called *Jinja Shintō* (Shrine Shinto) Religious discrimination in employment opportunities, if it existed at all, was very minor A person could be a devout Greek Orthodox, a Roman Catholic, any of a number of Protestant Christian sects, a member of any of thirteen Buddhist sects, a follower of any of the six major schools of Confucian philosophy, or an adherent to any of the thirteen Shinto religious sects So long as he openly complied with the official requirements of the *Kokka Shintō* rites and professed to believe in the official tenets of this cult, and particularly that part dealing with the national theory of state known as the *kokutai,* there was no apparent occupational discrimination Since there existed, under different and euphemistic names, a powerful Thought Control Bureau in the Ministry of Education to investigate public thought and to ensure private compliance with the official ideological demands, none but those arrested or imprisoned for "thought offences" may be considered to have really had their employment controlled This number, while very large—sixty-six thousand in the two decades prior to surrender

—was negligible in comparison with those gainfully employed.

A series of Allied Occupational Forces directives, beginning with the October 4th, 1945, "Japanese Bill of Rights", and culminating in the SCAP Directive of December 15th, 1945, which bore the title "Abolition of Government Sponsorship, Support, Perpetuation, Control, and Dissemination of State Shinto", effectively wiped out, at least on a legal basis, any possible future use of such devices of discrimination. Freedom of religion was presumably guaranteed by Article XXVIII of the old, or 1889 Meiji, *Constitution*. It is specifically guaranteed by Article XX of the new *Constitution*.

The question of prestige as a limiting factor in mobility of society and free choice in occupational employment is both the most difficult to determine and the most important It was in this area that the Japanese system, after structural limitations, most directly limited equal opportunity There were two methods by which prestige influenced the selection of an occupation The first was the establishment of certain generally accepted patterns of status attributed to various professions The second was the development of a reputation for excellency in certain institutions with a consequent preferential treatment accorded their graduates

The status of certain occupations in Japan, as in all other cultures, has markedly influenced the choice of employment Mention has already been made of the traditional class system, which was based upon types of occupation, linked historically with hereditary rights. The most marked shift of this sort which has taken place since the Second World War has been the loss of prestige for the military occupations. Japan has outlawed war, has written into the new *Constitution* this positive renunciation of war as a national policy, and has disbanded all military forces The returning veterans were treated with indifference or contempt instead of with the adulation which they had previously received It is quite possible that despite the pious—and probably at the time sincere—avowals of eternal demilitarisation, the pressure of history will some day again make military careers necessary in Japan But it seems likely that this changed status will in the future make selection of those occupations far less attractive What has been said of the military forces could be said of a number of other professions Teaching has undoubtedly gained in prestige, but fallen in relative economic position, which has already made recruitment for the teaching profession more difficult.

Perhaps the most outstanding matter of individual prestige which was found in pre-war Japan was that of family economic combines—the *zaibatsu* These were so powerful and so closely knit as family units that when a wealthy family faced the problem of marriage for a daughter, they frequently sought out one of the ablest younger managers in their industrial holdings and offered

him marriage on the condition that he become an integral part of the family through adoption and change of name. For other reasons the *zaibatsu* have been the subject of attack in the period of the Military Occupation, and are in the process of being broken up, while their holdings are being shifted to public corporations And Article XXIV of the new *Constitution,* by its provision that a woman can hold real property, has largely removed the economic reason for such customs of adoption-marriages.

On an institutional basis prestige has played very much the same role in Japan that it has in England and Europe Certain schools held the reputation of producing able graduates and also the reputation of being the only sure road to successful admission to highly desired industrial and Governmental posts Tokyo Imperial University, which is now called Tokyo University, has had the reputation of filling most of the desirable Government posts, especially in the diplomatic service and in the various ministries Kyoto Imperial University was considered second choice, followed by the remaining five Imperial universities and by certain of the better-known private universities, such as Waseda, Keiō, and Dōshisha Tokyo Imperial University had its Japanese name commonly contracted to *Tōidai* in the vernacular, and the powerful clique of Tokyo University graduates were frequently referred to as "The Old Tōidai Tie", with direct reference to their parallelism with the graduates of the famous public schools of England So powerful did this clique become in educational circles that the word *gakubatsu,* or "school combine", came to have the same evil connotation as the *zaibatsu* of industrial power and the *gumbatsu* of military control

Obviously, with such prestige attached to a handful of the forty-nine universities in the home islands of Japan, there inevitably grew up a terrific pressure to secure admission to one of the more favoured institutions Even before the war this was recognised to be an undesirable situation and admission was ostensibly based upon records, an interview, and placement on a competitive examination Since the war every effort has been made to decentralise educational and professional control and to break down the tight combines which have grown up in the several professions But despite all these measures, the students and their parents generally recognise that a graduate from one of the better preparatory schools has an enormous advantage—if not in prestige, at least in preparation—for the competitive admission to the desirable universities. Thus, there has grown up a tradition—only partly based on facts—that the real test of admission to the better universities is through admission to one of the so-called "numbered higher schools", that is, the *kōtō gakkō,* which bear a number instead of a name. The most famous of these is the First Higher School of Tokyo

Evidence of the way in which this tradition has persisted despite every effort of the Allied Forces to dispel it was given at the time early in 1946 when the former cadets from the several levels of military and naval academies were seeking admission to universities and secondary schools. There were available in the various *kōtō gakkō* of the country more than enough vacancies to accept all the displaced cadets, and the universities could have taken all the graduates of the various *kōtō gakkō*. But the ex-cadets knew that the best positions in the professions would normally go to the graduates of the élite universities, and the surest method of getting into one of the élite universities was through graduation from an élite *kōtō gakkō*—with the result that the numbered higher schools were swamped with applications What made it a political as well as an educational problem was the fact that the average ability of the ex-cadets was sufficiently high so that on straight competition they were likely to take practically all the available positions, thus converting the normally civilian *kōtō gakkō* into nothing but a school for ex-cadets

What Changes have come with Military Occupation

It will require at least another generation to determine with any exactness what the final results of the present Allied Military Occupation will be on the pattern of selection of occupational employment At present it is possible only to list a number of great social trends which appear likely to bring fundamental changes

The first is a fundamental redistribution of wealth Japan is going through a terrible financial crisis—one which has forced upon the Allied Occupation Authorities a basic modification of their original programme of industrial and commercial controls, and one which has broken up the traditional vested economic interests At the same time inflation and greatly increased taxation have produced a levelling effect which has already made certain occupations of status—such, as for example, teaching and office work—far less attractive than certain forms of skilled labour

The second great change is that produced by the series of purges A very considerable proportion of the most able people in Japan are to-day unable to hold public office or any responsible position in certain of the professions, such as, for example, the teaching profession, banking, and key industrial posts Temporarily, at least, their influence is negligible, and the pattern of educational preparation for preferred employment, which they illustrate, has to a certain extent been forced to accept the political stigma which they bear Thus, for example, at least temporarily, to be an "Old Tōidai Tie" is not only not an advantage but is a positive handicap in securing preferred positions in certain Government areas and in the administration of education Since the original educational pattern which produced these traditions was

based upon relatively sound grounds of good preparation, it does not seem unlikely that after the first antagonism has abated, there will be a reinstatement of such prestige, perhaps lessened somewhat by the increased number of institutions which have demonstrated their ability to give first-rate preparation

The most important single change has been a virtual rejection of the Governmental quota system as an integral part of the decentralisation of educational control Formerly the Ministry of Education, by controlling the number of teachers licensed, by controlling the budget, by controlling the creation of new schools, and especially by controlling the number of students admitted to higher institutions, held an absolute control over the number of persons for the professions and the skilled trades All this will be shifted to the control of individual institutions or to the prefectural educational authorities under the School Education Law of March 29th, 1947 In certain highly specialised professions, including those which are directly controlled by the Government, the problem of predicting the future needs of industry and of making provision for training for those needs has largely shifted to advisory committees The area of radio communications will serve as an example

> In November 1948 the Japan Advisory Committee on Radio Communication Education compiled estimates of the number of first-, second-, and third-class radio operator-technicians required by various radio communication agencies and industries for the annual periods of 1949–50 1950–1, 1951–2, 1952–3 This Advisory Committee is composed of representatives of Japanese merchant shipping companies, fishing-boat owners, Maritime Safety Bureau, Government railway, meteorological observatory, Ministry of Communication, news agencies, and radio-manufacturing companies The estimates are to be used as a basis for determining the number of students to be enrolled in the Radio Communication Training Institutes in order that an adequate, but not excessive, supply of radiomen will be available for employment in the various using companies
>
> (From a letter dated January 6th, 1949, from the Chief of the Education Division, CI & E, GHQ, SCAP, Tokyo)

The people of Japan are no longer descendants of the gods, they no longer are merely cogs in a Governmental machine obsessed by the dream of world domination and a divine destiny But only time will tell whether they have purchased real freedom, freedom of employment, or whether they have merely become cogs in a new machine—an industrial machine desperately striving for physical survival

ROBERT KING HALL

We are indebted to the Yale University Press for permission to include in Professor King Hall's article material previously published in his book *Education for a New Japan*, and to the Teachers College Bureau of Publications for permission to use material contained in his book, *Shūshin The Ethics of a Defeated Nation* —EDITORS

SECTION VI

COMPARATIVE STUDY OF SOCIAL ORIGIN OF STUDENTS IN THE UNIVERSITIES

THE following investigation is an attempt to compare the social composition of the student body in various countries It is a first attempt and its validity is very limited Nevertheless, the importance of the figures here presented is obvious for the consideration of many of the problems of democratic educational policy discussed in this volume The selection of the countries for this study was conditioned by two considerations First, only countries with universal primary education and having well-established systems of secondary and higher education could be included In countries like India or China, where education is available only to a minority among upper social groups, the student body is inevitably drawn from the upper classes, with a few individual exceptions representing the masses Secondly, only countries which have a statistical department and regularly undertake a census of the whole population could supply reliable data As a matter of fact, many of the tables of this study have not previously been published and were prepared specially for the YEAR BOOK These two facts explain why so few countries could be investigated and why, with the exception of the U S A , they are all taken from Europe Although the Editors sent out a uniform inquiry based on a classification which seemed to them most suitable, the answers used various schemes of division into social groups U S A was the only country which used our classification. We give the original tables with the notes for each country as received.

AUSTRIA

Supplied by Dr. W. Winkler, University-Professor, Director of the Institute of Statistics of the University of Vienna The Tables and Notes are taken from the Thesis "Hochschuluberfullung" by Richard Strigl, student of the Institute

The Statistical Seminar of the University of Vienna undertook an inquiry into the social origin of students in Austria. It was published in 1947. A. Schenk, *Die soziale Herkunft der Hörerschaft der Wiener Universitat.* As this work is based on a com-

paratively small selected sample, its general validity is questionable, but it shows quite clearly certain tendencies.

Vienna figures can be taken into consideration in spite of their limited basis, as they are confirmed by figures given by Professor Dobretsberger for Graz. The table shows that the middle class, which forms just over a quarter of the population, provides the majority of students, whereas the upper class provided about one-quarter of students The percentages of the upper and middle classes remain more or less stable The increase is noticeable only in the percentages of the lower class—i e the workers Here, although small, it is constant Research in other countries, U S A and Hungary for instance, has shown that there as well as in Austria it is mainly the lower classes of population which send increasing numbers, both absolutely and relatively, to the universities The increase in the number of students is thus mainly an evidence of the urge for social rise

In our tables, this urge from the lower to the upper strata would have been even more evident if we had separated the farmers from the middle class. On the other hand, it is rather difficult to decide where the border-line between the upper and middle classes lies. In the last decades, the number of professional families has increased considerably and we could not include all of them in the "upper class", as our "upper class" is too much spread out already. With these two qualifications it is quite evident that in Austria it is the lower class which presses for higher education in growing numbers.

TABLE I

LABOUR FORCE IN AUSTRIA, 1939

(*International Labour Office Year Book*, 1947–8)

Industry	*Employers and Independen. Workers*	*Salaried Employees*	*Workers*	*Total*
Agriculture and forestry	340,051	10,485	322,517	672,953
Mining	20	2,524	24,305	26,849
Manufacturing industry and handicrafts	125,938	100,637	651,604	878,179
Construction	14,902	17,240	227,424	259,566
Transport and communications	8,316	97,115	84,678	190,109
Commerce and finance	73,330	113,204	61,627	248,161
Hotels and personal service	35,655	17,679	189,448	242,782
Public and civil service	16,765	243,226	58,957	318,948
TOTAL	614,977	602,110	1,620,560	2,837,647

Members of families unpaid—811,242

TABLE II

POPULATION IN AUSTRIA IN 1946 — 6,818,593

Number of Students in 1946

Vienna	
University	9,014
Technische Hoch Schule	2,256
Agricultural Institute	621
Graz	
University	4,596
Technische Hoch Schule	1,676
Innsbruck	
University	4,185
TOTAL	22,348

TABLE III

STUDENTS OF VIENNA UNIVERSITY BY SOCIAL ORIGIN

In percentages

Winter Semester	*Upper Class*		*Middle Class*			*Lower Class Workers*		*Unclassified*	*Total*
	Landowners, Employers of Labour in Industry and Trade	*Higher-grade Civil Service, Academic Liberal Professions, and Clergy*	*Civil Servants and other Clerical Employees, Liberal Professions of Non-academic status*	*Retail Traders and Artisans*	*Farmers*	*Industry, Trade, and Transport*	*Agriculture*		
1910–11	27 5		51 8			3 8		16 9	100
1930–31	32 0		42 6			4 3		21 1	100
1946–47	23 7		50 3			8 0		18 0	100

STUDENTS OF GRAZ UNIVERSITY BY SOCIAL ORIGIN[1]

Summer Semester 1946	34 7		51 3		7 1	6 9		—	100

LABOUR FORCE OF AUSTRIA, CENSUS 1939

1939	8 1		22 9		11 9	57 1		—	100

[1] *From Prof Dobretsberger, "Die soziale Herkunft unserer Intelligenz," in* Die Furche, *January 4th,* 1947

CZECHOSLOVAKIA

Supplied by Professor V. Prihoda. The Czech Bureau of Statistics could not arrange the distribution of population and students in accordance with the classification provided by the YEAR BOOK OF EDUCATION *The three tables give the distribution by occupations and social status as accepted in Czechoslovakia The pre-war figures cannot be compared with the tables given owing to the great changes in composition of population as a result of transfer of the Sudeten Germans to Germany.*

TABLE IV

NUMBER OF PUPILS OF VI–VIII GRADES IN ALL SCHOOLS BY ORIGIN

in Bohemia and Moravia on December 12th, 1945, compiled from Professor V Prihoda's article

Social Group	*In all Schools*	*Per cent to Total*	*In Grammar Schools*	*Per cent to all Schools*	*Per cent to Total in Grammar Schools*	1947	
						Labour Force	*University Students*
Trade and business	80,052	20	8,566	10 7	19 9	7	19
Professions	5,867	2	2,271	38 7	5 3	15	55
Civil Service and clerical	44,412	11	19,186	43 2	44 6		
Lower officials and employees	40,035	10	3,524	8 8	8 1	9	9
Farmers	90,003	23	3,150	3 5	7 3	24	9
Workers	111,293	28	4,007	3 6	9 3	46	7
Other occupations	18,155	5	2,161	11 9	5 0	—	—
Unknown	3,340	1	224	6 7	0 5	—	—
TOTAL	393,957	100	43,080	11	100	—	—

TABLE V

DISTRIBUTION OF POPULATION ACCORDING TO GAINFUL OCCUPATION IN THE CZECH LANDS OF CZECHOSLOVAKIA (BOHEMIA, MORAVIA, SILESIA) IN 1947, AS COMPARED WITH THE SOCIAL ORIGIN OF THE CZECH STUDENTS IN THE INSTITUTIONS OF HIGHER LEARNING IN 1947

	Main Lines of Occupations						
	Agriculture, Forestry	*Industry, Trades*	*Commerce, Transportation*	*Public Service, Professions*	*Personal and Home Service*	*Others, no Occupation*	*Total*
Population	1,784,797	3,460,601	1,132,144	858,464	203,629	1,332,726	8,762,361
Students	5,981	13,724	13,133	18,589	766	829	53,022
Number of Students per 1,000 inhabitants	3 35	3 96	11 60	21 90	3 76	0 62	6 05

TABLE VI

DISTRIBUTION OF POPULATION ACCORDING TO SOCIAL STATUS IN THE CZECH LANDS (BOHEMIA, MORAVIA, SILESIA) IN 1947, AS COMPARED WITH THE SOCIAL ORIGIN OF THE CZECH STUDENTS IN UNIVERSITIES AND TECHNICAL INSTITUTES IN 1947

	Social Standing of Occupied Persons						
	Owners and Rentiers	*Officials*	*Lower Employees*	*Labourers*	*Not Indicated*	*Unoccupied Family Members*	*Total*
Population at large	736,370	591,516	348,565	1,866,339	4,903	5,215,668	8,762,361
Number of students	15,221	28,630	4,994	3,549	628	—	53,022
Number of students per 1,000 inhabitants	20 67	48 40	14 33	1 89	12 81	—	6 05

Note to Tables V and VI *There are no data available in Czechoslovakia for* 1939

FRANCE

Tables and Note supplied by A Rosier, Sécrétaire Général du Bureau Universitaire de Statistique, Paris

Social Origin of Students

The inquiry into the social origin of students was undertaken for the first time in 1939 under the auspices of the Bureau Universitaire de Statistique At that time, owing to the novelty of the task, the inquiry was partial, including only about 50 per cent of students in French universities It seems, therefore, that only the relative figures can be considered, i e the percentages of various social groups chosen for comparison Out of 78,973 students registered in all faculties in 1939, only 34,125 could be classified by the occupations of their parents Among these parents 27 per cent were members of the Civil Service and similar groups, 17 per cent liberal professions, 16 5 per cent merchants and company managers and directors, 12 per cent employees, 14 5 landowners, farmers, and people of independent means, 3·5 per cent artisans, 1 5 industrial workers, and 1 per cent. agricultural workers If we compare the identical distribution by groups in 1948, which this time included all students, we do not see significant changes in percentages Only the groups of employees and artisans changed their percentages, the first decreased from 12 to 9 6 and the second increased from 3 5 to 7 6 It is noticeable that only the civil servants could maintain their initial standard of life and provide the same proportion of their age-groups for higher institutions The liberal professions, merchants, and especially people of independent means show a considerable decrease of percentages in their age-groups One can notice also that the workers do not furnish more than 3 per cent of students By sexes all social groups show an identical distribution for boys and girls It seems, however, that among the civil servants there is an abundance of girls who dominate the faculties of Arts and Pharmacy It is evident that most of the daughters of teachers, both of primary and secondary schools, are equally destined for higher education and overcrowd the faculty of Arts Children of civil servants also enter the faculties of Arts to the extent of 40 per cent., whilst sons of parents in the liberal professions prefer the faculties of Science and Medicine. We should note also that sons of workers prefer scientific studies and that the heirs of industrial and commercial fortunes concentrate in the faculty of Pharmacy and to a certain extent in that of Medicine.

In conclusion, it is evident that statistics on social origin of students prove the actual predominance of middle and bourgeois

classes in the recruitment of higher education in France In order to confirm this opinion more definitely, it would be necessary to provide statistics based not on more or less precise occupational distribution but on incomes of parents of the students It is difficult to obtain significant data for such inquiry. The persistence of barriers between the primary and secondary as well as between the technical and higher education still dominates the situation Only the advent of the much desired economic " better days," as well as the perfection of the regime of bursaries and perhaps the introduction of pre-vocational salaries for the students, would provide effective factors for a more intensive democratisation of higher education.

TABLE VI

OCCUPATIONAL DISTRIBUTION OF FRENCH POPULATION BY GROUPS OF ACTIVITIES (SALARIED AND WAGE-EARNERS)

(Supplied by M Roger Gal)

Activity	1926	1931	1936	1946[1]
Agriculture and forestry	2,356,000	2,145,000	1,898,000	1,200,000
Mines	428,000	429,000	326,000	370,000
Industries of transformation	4,885,000	4,956,000	3,896,000	4,448,000
Transport	743,000	855,000	652,000	835,000
Commerce	1,282,000	1,376,000	1,299,000	1,210,000
Public services and Army	1,165,000	1,313,000	1,433,000	1,900,000
Liberal professions	361,000	402,000	445,000	460,000
Domestic services	766,000	790,000	748,000	600,000
TOTAL	11,986,000	12,266,000	10,697,000	11,023,000

[1] *Estimated distribution according to the provisional results of the census*

TABLE VII

THE NUMBER OF GAINFULLY EMPLOYED PEOPLE IN FRANCE ON JULY 1ST, 1948 (ONLY SALARIED AND WAGE-EARNERS)

Vocational Group	*Professional and Employees*		*Workers*		*Total*	
	Men	*Women*	*Men*	*Women*	*Men*	*Women*
Production of energy (mines)	35,200	4,400	330,400	10,500	365,600	14,900
Industrial production (factories)	542,500	240,600	2,670,500	1,007,400	3,213,000	1,248,000
Transport	137,000	21,600	469,500	41,400	606,500	63,000
Trade | Food	87,000	71,600	104,500	27,900	191,500	99,500
Trade | other	181,000	168,500	144,600	49,400	325,600	217,900
Finance	119,800	118,600	3,900	1,700	123,700	120,300
Theatrical and other performances	6,800	8,500	7,100	6,100	13,900	14,600
Health services	6,800	9,600	39,900	68,700	46,700	78,300
Liberal professions	53,000	65,200	40,300	59,500	93,300	124,700
TOTAL ACTIVITIES	1,169,100	708,600	3,810,700	1,272,600	4,979,800	1,981,200

Note *The following groups are* not *included* (*a*) *Employers of labour* (*b*) *Independent farmers* (*c*) *People of independent means* (*d*) *Civil service and armed forces*

TABLE VIII

Social Origin of French Students

(Comparative Statistics in Percentages)

Occupations of Parents	*July 31st*, 1939	*July 31st*, 1940	*July 31st*, 1941	*July 31st*, 1942	*July 31st*, 1943	*July 31st*, 1945	*July 31st*, 1947	*July 31st*, 1948
Liberal professions	17 0	19 3	18 0	20 1	20 3	18 0	17 3	18 0
Employers of labour in trade and industry	16 5	15 7	15 8	16 1	16 4	16 5	16 9	16 3
Civil Service and similar groups	27 0	25 0	22 6	23 5	26 3	25 0	28 0	27 4
Employees in trade and industry	12 0	13 0	12 2	13 0	11 0	13 1	11 1	9 6
Artisans	3 5	3 7	4 4	4 3	3 9	4 7	4 8	7 1
Industrial workers	1 5	1 6	1 4	1 4	1 9	1 5	1 3	1 5
Agricultural workers	1 0	1 0	0 8	0 6	0 6	0 7	0 8	0 5
Parents of independent means	14 5	14 9	15 6	13 2	13 1	11 5	12 4	11 8
Unclassified	7 0	6 3	9 2	7 8	8 5	9 0	7 4	7 8
TOTAL	100 0	100 5	100 0	100 0	102 0	100 0	100 0	100 0
Number of students included	34,125	49,266	70,945	82,069	97,848	81,285	113,526	100,466
Total number of students French citizens	69,350	51,768	73,547	87,408	103,558	89,086	124,269	—

TABLE IX

SOCIAL ORIGIN OF STUDENTS BY FACULTIES
TO JULY 31ST, 1939

Occupations of Parents	*Law*	*Art and Theology*	*Sciences*	*Medicine*	*Pharmacy*	*Total*
Civil Service and similar groups	2,492	2,727	1,807	2,019	929	9,974
Liberal professions	1,660	1,022	1,033	1,777	818	6,310
Employers of labour in trade and industry	1,495	1,174	1,291	1,413	761	6,134
Parents of independent means	1,080	1,025	904	1,494	631	5,134
Employees in trade and industry	1,163	1,060	838	888	334	4,283
Artisans	250	303	387	242	130	1,312
Industrial workers	86	189	129	161	74	639
Agricultural workers	83	75	64	80	37	339
Total of students included	8,309	7,575	6,453	8,074	3,714	34,125
Actual number of all students	22,470	21,631	12,822	16,027	6,023	78,973
			French citizens			69,350

TABLE X

SOCIAL ORIGIN OF STUDENTS IN 1946
(Supplied by M Roger Gal)

Origin of Parents	*Men*		*Women*	
	No	*Per Cent*	*No*	*Per Cent*
Liberal Professions	4,486	16 3	2,966	16 9
Employers in trade and industry	4,547	16 6	2,563	15 7
Civil Service	6,732	24 7	5,586	30 6
Employees in trade and industry	3,680	13 2	1,655	13 3
Artisans	1,362	5 4	836	4 8
Workers, industrial	500	1 8	197	1 5
Workers, agricultural	219	0 8	72	0 6
Farmers	821	3 1	409	4 4
People of independent means	1,840	7 2	1,313	8 0
Unclassified	2,678	9 0	771	6 2
TOTAL	26,865	100	16,368	100

TABLE XI

SOCIAL ORIGIN OF UNIVERSITY STUDENTS IN FRANCE IN 1948

Status of Parents	*Law*		*Arts*		*Sciences*		*Medicine*		*Pharmacy*		*Total*		*Total*
	Men	*Women*	*Men*	*Women*	*Men*	*Women*	*Men*	*Women*	*Men*	*Women*	*Men*	*Women*	
Liberal professions	2,195	716	1,746	2,106	3,077	1,299	4,265	982	784	739	12,261	5,883	18,144
Directors and managers of commercial and industrial enterprises (employers)	2,663	738	1,308	1,872	2,834	1,026	3,190	1,028	924	966	10,985	5,641	16,626
Civil Service	3,560	1,082	4,737	6,893	3,122	1,092	4,387	1,254	673	794	16,576	11,146	27,722
Employees	1,659	441	909	1,005	2,196	564	1,725	443	228	236	6,991	2,775	9,766
Artisans	710	246	833	1,002	1,062	294	742	220	114	122	3,515	1,904	5,419
Independent farmers	909	276	743	800	849	312	838	203	137	236	3,483	1,828	5,311
Workers, industrial	274	84	231	228	490	168	165	57	42	34	1,223	573	1,796
Workers, agricultural	78	11	100	88	183	76	67	9	7	10	438	195	633
Independent means	7,261	348	1,265	1,624	628	220	812	216	292	291	4,305	2,725	7,030
Unclassified	872	303	1,113	1,050	827	192	2,155	923	241	276	5,256	2,763	8,018
TOTAL	20,181	4,245	12,985	16,668	15,268	5,243	18,346	5,335	3,442	3,704	65,033	35,433	100,466

TABLE XII

FRANCE SECONDARY SCHOOLS, LYCÉES AND COLLÈGES SOCIAL ORIGIN OF PUPILS OF 6me (FIRST YEAR) OF LYCÉES AND COLLÈGES, 1948

Status of Parents	*Pupils admitted to*					
	6me *Classical*		6me *Modern*		*Total*	
	Number	%	*Number*	%	*Number*	%
Civil Service	6,830	57	5,164	43	11,994	21 7
Armed forces	1,350	53	1,212	47	2,562	4 6
Directors and managers of commercial and industrial enterprises (employers)	4,796	52	4,382	48	9,178	16 6
Independent means	650	48	701	52	1,351	2 5
Farmers	1,493	33	3,076	66	4,569	8 3
Workers	1,599	25	4,773	75	6,372	11 6
Artisans	1,923	36	3,410	64	5,333	9 7
Clerical	4,165	42	5,598	58	9,763	17 7
Liberal professions	2,914	73	1,103	27	4,017	7 3
TOTAL	25,720	47	29,419	53	55,139	100

Grandes Écoles, 1947–48, *Number of Students*

Agriculture	1,979
Administration	671
Armed forces	2,300
Education	1,093 (300 women)
Fine arts	4,067 (500 women)
Commercial	3,032 (300 women)
Technical	6,373
TOTAL	19,515

GREAT BRITAIN

The data in the accompanying tables were compiled from the Reports of the Ministry of Education and from the Returns of the University Grants Committee. Tables XVIII and XIX were specially prepared by the University Grants Committee for the present volume, and Table XIV was taken from the *Statistical Abstract,* 1948. Although the figures given in the table generally include those for Scotland and Wales, conclusions regarding the social origin of students can be drawn only for England

The tables were collected and the notes supplied by J A Lauwerys and N Hans, assisted by Miss D M Lee

England

Since its educational system and its social structure differ considerably from those of Scotland and Wales, England has to be considered separately For instance, while the private preparatory and the independent public schools continue to play an important role in England, their influence in the rest of the United Kingdom is very small Again, the old and historical differentiation into "classes" and "masses" has not altogether vanished in England, in spite of profound changes In Scotland and Wales, the population is more socially homogeneous and social mobility is greater

In England, employers of labour, persons of independent means, members of the managerial groups and the higher grades of the liberal professions or of the Civil Service do not, as a rule, send their children to the primary schools maintained by public authority. They prefer privately owned preparatory schools. In Scotland and Wales, on the other hand, it is exceptional to hear of children being sent to any but public primary schools

Since British statistics do not give the distribution of university students according to their social origins, it is impossible to draw any conclusions for Scotland or Wales. However, using an indirect method, one can arrive tentatively at rough approximations for England.

The democratisation of the English universities proceeded slowly in the period between the two World Wars. But since 1940, and especially since 1945, the percentage of ex-primary school students has increased very rapidly even in the old universities of Oxford and Cambridge. Thus, in 1938–9 ex-primary school students formed 33 per cent of all English students, ex-preparatory school students 60 per cent. and foreign students 7 per cent In 1947–8, these numbers had changed to 50, 42, and 8. Excluding foreign and overseas students, the percentage of English students who had started their education in public primary schools was as high as 54.

There was, however, a considerable difference between one university and another the lowest percentage—27—is at Cambridge, and the highest—80—at Manchester.

Children of agricultural and industrial workers form the overwhelming majority in public primary schools—only about 20 per cent. of the parents are independent ("self-employed") or clerical workers. Now, students who entered the universities about 1945 or 1946 must have been admitted to the grammar schools (formerly "secondary schools") under the old pre-war regulations Free places were then awarded, after an examination, to children of parents earning every week less than £4 10*s.* in urban districts or £4 in agricultural districts Thus, such parents must usually have been agricultural or industrial workers Relatively few higher-grade skilled workers, either industrial or clerical, would be earning enough to have to pay fees We can therefore, with a good measure of confidence, identify the free-placers as children of workers The proportion of ex-primary school children who were awarded free places in grammar schools amounted to 56 per cent But, as a rule, a higher proportion of free-placers than of fee-paying pupils passed the Matriculation Examination, so that 75 per cent of all ex-primary school pupils who passed the Matriculation Examination were free-placers, that is, probably children of workers

Post-war regulations opened the possibility to all ex-Service men and women with the right qualifications to obtain free and adequately supported university education We may fairly safely conclude that 75 per cent of all ex-primary school students were of working-class origin Or, multiplying 54 by 75, we obtain 40 per cent of all English students Certainly, this is no more than a rough approximation, but it is likely that we have erred rather on the conservative side and it may well be that the right percentage is nearer 45 than 40.

Having thus separated out the students of working-class origin, we have between 55 per cent and 60 per cent who are the sons and daughters of independent, professional, or clerical workers, or whose parents are employers of labour and persons of independent means (rentiers) As mentioned earlier, employers of labour as well as the higher grades of the liberal professions and of the Civil Service send their children to private preparatory and independent public schools or to grammar schools on the direct-grant list Table XVIII shows that about 20,000 children of a particular age attend independent efficient schools, and about 30,000 attend other private schools. The whole age-group amounts to 550,000 children, which means that about 10 per cent of all pupils are outside the State system If we count only the pupils in grammar schools, we find that as many as 30 per cent. of possible future university students attend independent schools.

TABLE XIII

Great Britain

LABOUR FORCE IN 1947 (ENGLAND, WALES, AND SCOTLAND)

(Population, 1947 England and Wales—43,050,000, Scotland—5,139,000)

		Approx for Scotland
Agriculture and fisheries	1,080,000	(200,000)
Mining and quarrying	829,000	(150,000)
Metals, engineering, shipbuilding, etc	3,485,000	
Textiles	783,000	
Leather, wood, paper, etc	768,000	
Clothing, boots, etc	629,000	
Food, drinks, tobacco	609,000	(850,000)
Chemicals, etc	356,000	
Cement, bricks, pottery, etc	253,000	
All other manufactures	218,000	
Building and civil engineering	1,344,000	
Gas, water, and electricity	266,000	(20,000)
Transport and shipping	1,417,000	(160,000)
Distributive trades	2,319,000	
Commerce and finance	347,000	
Civil and local services	2,173,000	(150,000)
Miscellaneous services	1,774,000	(230,000)

Total Labour Force *Males*—14,618,000, *Females*—5,739,000

OCCUPATIONS IN 1931

	England and Wales		*Scotland*
	Men	*Women*	*M & W*
Employers, directors, etc	922,000	138,000	121,000
Operative employers	9,806,000	4,614,000	1,626,000
Independent workers	835,000	321,000	117,000
Out of work	1,684,000	483,000	358,000
Retired or unoccupied	1,386,000	10,805,000	1,396,000

The percentage of leavers from grammar schools who enter universities varies with each group of schools The L E A grammar schools send only 6 per cent of their leavers to the universities, the direct-grant schools, 10 per cent, the independent grammar schools, up to 30 per cent. Thus, about 6,000 students enter universities each year from independent grammar schools—that is, about 35 per cent. We are presumably justified in identifying these students as the sons and daughters of employers of labour, of managers and directors, of people of independent means, of professional people, of higher civil servants. Though of course there will be exceptions to this statement, they would in all likelihood be few and more or less cancelled since a few children of such parents would come by other routes.

The remaining 20 per cent to 25 per cent of students come from parents in the lower grades of the Civil Service, clerical employees, independent farmers, artisans, retail shopkeepers, etc. In the total labour force these groups form 20 per cent to 25 per cent., and it is not unreasonable to assume that the proportion of students furnished by them corresponds with this percentage.

TABLE XV

Great Britain

STUDENTS ENTERING UNIVERSITIES FOR THE FIRST TIME

	1938–9				1947–8				*Increase Percentages*	
	Ex-primary School	*Ex-preparatory School*	*Foreign and Overseas*	*Total*	*Ex-primary School*	*Ex-preparatory School*	*Foreign and Overseas*	*Total*	*Ex-primary*	*Ex-preparatory*
England	3,895	6,764	1,104	11,763	8,920	7,477	1,481	17,878	129	15
Wales	636	69	20	725	1,431	129	49	1,609	125	53
Scotland	1,612	768	285	2,665	3,184	501	335	4,020	98	—37
Gt Britain	6,143	7,601	1,409	15,153	13,535	8,107	1,865	23,507	120	6

Note —It should be remembered that these numbers cover first-degree and diploma students entering the institutions named for the first time the figures are not, therefore, exclusively those of students who were entering upon University courses for the first time For example, the numbers of medical students at the London schools for final medical studies and at the Welsh National School of Medicine represent those entering on their clinical studies , the figures for the complete medical schools in London also include the new entrants for clinical studies from Oxford and Cambridge Those for the Institute of Education which are included in the totals denote graduates who were entering on the one-year course of professional training

TABLE XVI

ASSISTED STUDENTS, 1947–8

Only full-time students are included

	Total Number of Students	*Assisted*		*Ex-primary School Students* 1944–7
		Number	*Percentage of Total*	
Oxford	7,371	5,925	80	1,415
Cambridge	7,432	5,774	78	2,163
London	16,611	10,321	62	7,183
Provincial universities	26,887	20,043	75	17,557
England	58,301	42,063	72	28,318
Wales	4,762	3,772	78	4,348
Scotland	15,444	9,754	63	10,429
Great Britain	78,507	55,589	71	43,095

Scholarships in English Universities, 1948

State	1,000
L E A , major	13,154
L E A , lesser	3,402
Private (approximately)	6,000
Ex-soldiers, State (approximately)	20,600

Of which about 8,000 are women

We thus obtain the following figures the upper social group being 9 per cent of the whole, supply 35 per cent of the student the middle groups, 20 per cent to 25 per cent of the whole, supp 20 per cent to 25 per cent of the students, the agricultural a industrial workers, 70 per cent of the whole, supply 40 per cent 45 per cent of the students Before the war, the distribution w more "aristocratic", if this world may be used in this connectio since about 60 per cent of the students came from the upp social groups and only about 20 per cent were of working-cla origin. The change is a direct result of the post-war policy giving generous assistance to men and women who had served the Armed Forces.

Table XVI, dealing with "Assisted Students", displays t change numerically. In 1938–9, only 38 per cent. of students we assisted; in 1946–7, 68 per cent ; in 1947–8 the percentage rose to 7 The table illustrates another interesting feature the highest pe centages of assisted students are in Oxford (80 per cent.) and Cam bridge (78 per cent), the two universities which have the lowe percentage of ex-primary school students There are two reasons f this first, ex-Service students receive assistance irrespective of the financial position, secondly, at both these older universities hu dreds of exhibitions and scholarships are awarded after a ve difficult competitive examination. Some of these scholarships a

available only to boys in certain public schools; for the others, public school boys have a marked advantage of being frequently specially coached and prepared Thus a large proportion of these exhibitions and scholarships are held by ex-public school boys, who usually belong to the upper social groups. The low percentage in London is due, in part, to the large proportion of overseas students and, in part, to the fact that many London students live at home, travelling to their college every day. Thus this university can be attended by students who would be unable, without special assistance, to face the cost of living away from home

TABLE XVII

England

AGE-GROUP 12–13 IN 1947

In Schools	*L E A Schools*	*Direct-grant Schools*	*Independent Efficient Schools*	*Total Age-groups*
Primary	107,457	—	2,624[1]	110,081
Secondary modern	267,135	—	—	267,135
Secondary grammar	97,801	11,512	16,769	126,082
Secondary technical	16,550	464	—	17,014
Special	4,013	920	—	4,933
TOTAL	492,956	12,896	19,393	525,245

[1] *Preparatory private schools*

In addition about 25,000–30,000 are in private schools, the total age-group being about 555,000 children

England

LEAVERS OF SECONDARY SCHOOLS IN 1948

Secondary Schools	*To Universities*				*Total Leavers*		
	Boys	*Percentage of All Leavers*	*Girls*	*Percentage of All Leavers*	*Boys*	*Girls*	*Total*
L E A modern	6	—	—	—	82,830	82,917	165,747
L E A grammar	3,062	7	2,154	5	43,912	44,838	88,750
L E A technical	8	—	2	—	16,334	8,345	24,679
Direct-grant grammar	493	10	433	9	4,751	5,138	9,889
TOTAL	3,569	2 5	2,589	1 1	147,827	141,238	289,065

TABLE XVIII

FULL-TIME GRADUATING AND DIPLOMA STUDENTS WITH HOMES IN THE UNITED KINGDOM WHO WERE ADMITTED FOR THE FIRST TIME AND WHO HAD PREVIOUSLY COMMENCED THEIR EDUCATION IN A PRIMARY SCHOOL

MEN

Institution	1937–8	1938–9	1939–40	1940–1	1941–2	1942–3	1943–4	1944–5	1945–6	1946–7	1947–8
Birmingham University	110	102	151	127	158	170	163	196	210	362	420
Bristol University	73	73	57	78	103	90	106	116	143	285	336
Cambridge University	—[1]	308	320	300	382	370	296	306	597	476	521
Durham University	224	225	237	219	208	299	228	272	269	505	561
Exeter University College	67	40	64	55	46	66	38	40	78	100	127
Hull University College	—[1]	—[1]	—[1]	—[1]	—[1]	—[1]	—[1]	—[1]	58	147	119
Leeds University	170	220	240	186	249	251	251	267	388	465	460
Leicester University College	—[1]	—[1]	—[1]	—[1]	—[1]	—[1]	—[1]	—[1]	14	80	142
Liverpool University	209	219	205	190	210	240	212	205	266	380	385
London University without Medical Institutions	470	599	443	346	510	617	544	639	840	1,067	1,065
London Medical Institutions	100	122	85	90	105	132	109	157	211	233	230
Total, London Institutions	570	721	528	436	615	749	653	796	1,051	1,300	1,295
Manchester University	352	390	364	403	402	391	359	364	438	813	882
Nottingham University College	111	132	163	122	174	152	123	123	138	293	298
Oxford University	—[1]	290	211	229	222	233	99	147	280	144	552
Reading University	45	36	71	46	51	65	55	48	38	60	79
Sheffield University	92	99	101	105	124	150	129	150	159	315	340
Southampton University College	41	39	50	50	43	60	50	51	54	121	150
Total, England	2,064	2,894	2,762	2,546	2,987	3,286	2,762	3,081	4,171	5,846	6,667
Total, Wales	434	467	475	444	514	517	431	409	597	984	1,072
Aberdeen University	193	203	171	175	187	191	139	149	215	313	357
Edinburgh University	127	184	292	289	321	340	334	140	416	577	717
Glasgow University	551	602	630	645	747	718	691	703	768	1,176	1,131
St Andrews University, including Dundee University College	94	115	126	113	123	129	117	118	160	227	235
Total, Scotland	965	1,104	1,219	1,222	1,378	1,384	1,281	1,110	1,559	2,293	2,440
GRAND TOTAL, Great Britain	3,463	4,465	4,456	4,212	4,874	5,187	4,474	4,600	6,327	9,123	10,179

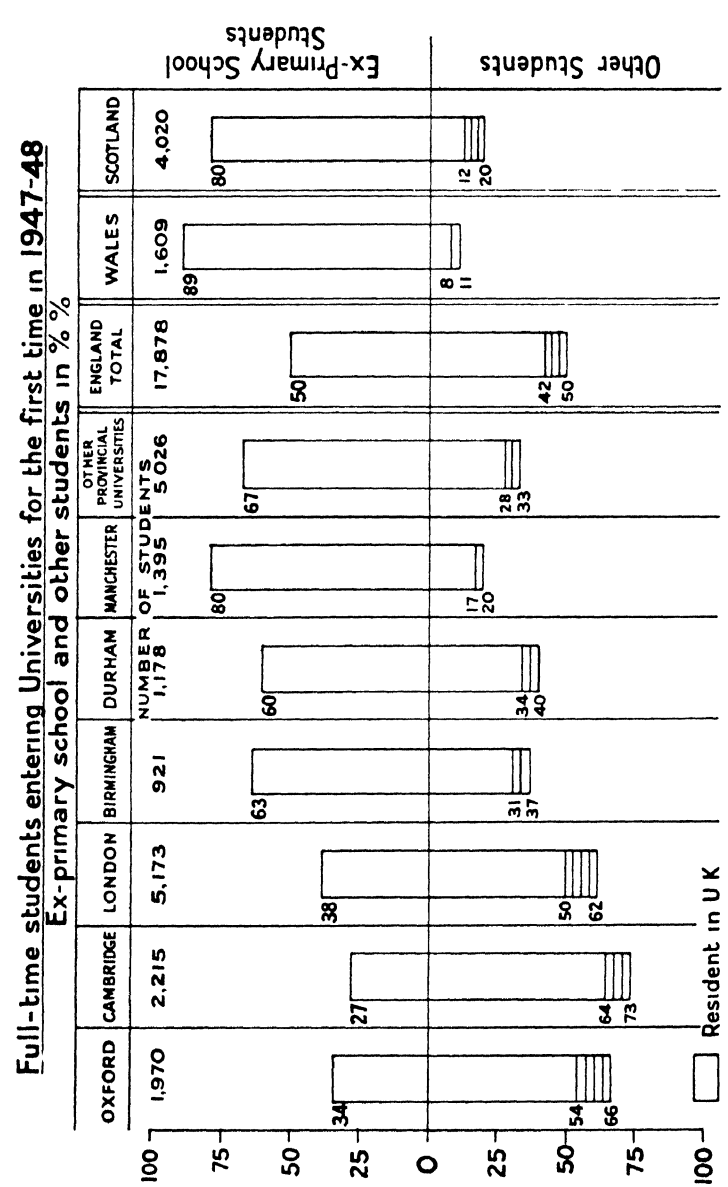
TABLE XIX

FULL-TIME GRADUATING AND DIPLOMA STUDENTS WITH HOMES IN THE UNITED KINGDOM WHO WERE ADMITTED FOR THE FIRST TIME AND WHO HAD PREVIOUSLY COMMENCED THEIR EDUCATION IN A PRIMARY SCHOOL

WOMEN

Institution	1937–8	1938–9	1939–40	1940–1	1941–2	1942–3	1943–4	1944–5	1945–6	1946–7	1947–8
Birmingham University	61	88	87	58	73	93	118	139	157	164	157
Bristol University	31	23	26	40	49	52	68	89	119	90	119
Cambridge University	—[1]	31	38	34	41	47	63	68	60	58	77
Durham University	61	81	46	63	73	92	68	96	127	120	145
Exeter University College	15	23	21	34	38	39	31	49	72	35	93
Hull University College	—[1]	—[1]	—[1]	—[1]	—[1]	—[1]	—[1]	—[1]	32	85	67
Leeds University	61	62	60	66	74	80	115	151	241	116	109
Leicester University College	—[1]	—[1]	—[1]	—[1]	[1]	—[1]	—[1]	—[1]	7	27	79
Liverpool University	55	66	57	60	87	119	135	165	131	118	96
London University without Medical Institutions	245	352	290	286	335	461	524	698	715	615	614
London Medical Institutions	7	13	15	4	17	15	14	10	27	24	38
Total, London Institutions	252	365	305	290	352	476	538	708	742	639	652
Manchester University	81	100	106	104	122	156	188	207	259	267	235
Nottingham University College	21	27	34	27	32	50	67	80	147	89	107
Oxford University	—[1]	62	60	61	69	77	93	82	41	47	122
Reading University	25	36	67	36	36	50	63	62	67	61	67
Sheffield University	26	24	21	23	30	41	42	49	53	70	72
Southampton University College	8	13	15	13	9	13	14	15	36	45	56
Total, England	697	1,001	943	909	1,085	1,385	1,603	1,960	2,291	2,031	2,253
Total, Wales	166	169	162	184	226	251	291	292	337	298	359
Aberdeen University	89	116	110	114	155	106	148	143	139	101	115
Edinburgh University	87	98	124	110	145	234	251	103	295	272	286
Glasgow University	181	215	302	320	286	303	324	303	315	314	244
St Andrews University including Dundee University College	49	79	78	69	96	91	109	116	90	92	99
Total, Scotland	406	508	614	613	682	734	832	665	839	779	744
GRAND TOTAL, Great Britain	1,269	1,678	1,719	1,706	1,993	2,370	2,726	2,917	3,467	3,108	3,356

[1] *Figures not available*


Full-time students entering Universities for the first time in 1947-48
Ex-primary school and other students in %
Ex-Primary School Students
Other Students
OXFORD
CAMBRIDGE
LONDON
BIRMINGHAM
DURHAM
MANCHESTER
OTHER PROVINCIAL UNIVERSITIES
ENGLAND TOTAL
WALES
SCOTLAND
NUMBER OF STUDENTS
1,970
2,215
5,173
921
1,178
1,395
5026
17,878
1,609
4,020
100
75
50
25
0
25
50
75
100
34
27
38
63
60
80
67
50
89
80
54
66
64
73
50
62
31
37
34
40
17
20
28
33
42
50
8
11
12
20
Resident in U K
Foreign and Overseas students

ITALY

Tables and Notes supplied by V. Castrilli, Professor of the University of Siena and Director of the Institute of Statistics, Siena.

(1) Even before World War II the inquiry into the social origin of students attracted the attention of sociologists and statisticians. The first data published in this field were collected during the academic year 1931–2 by the Central Statistical Institute of Italy [1] Several years later the University of Padua conducted an inquiry for the students who attended there during the period of 1933–9, but the available results included only the years 1933–4, 1936–7, and 1938–9 [2] Quite recently Dr A de Polzer, Reader at Padua University, has published the results of a similar inquiry concerning the students who graduated at Padua in 1945–6 and 1946–7 [3] These graduates attended the university during the war, most of them being registered for the first time between 1941 and 1942 The inquiry started at the University of Siena on the students of 1947–8 gave some information about the social distribution of the academic population of the post-war period. This inquiry considered the fathers of students from different social aspects (*a*) occupation, (*b*) the grade within the profession, (*c*) education, (*d*) economic position

The tables which follow reproduce the main results of the first three classifications, since the data on the economic situation are not yet available Concerning the methods of classification adopted in the tables, we have divided the occupational group of "communications and transport" into two, those of private and those of State enterprises, as the latter group enjoys the legal and economic status of public administration. It should be pointed out, also, that in some tables occupations having certain affinities are grouped together, for instance those of agriculture, industry, communications, and transport controlled by private enterprise are united in a large group representing various branches of production, on the other hand, employees of banks, Civil Service and armed forces, communications and transport controlled by the State are grouped together as public services

In the statistics on the social origin of students it should be

[1] Istituto Centrale di Statistica, *Indagine sugli studenti iscritti nelle universitá e negli instituti superiori nell'anno accademico 1931–2* (Roma, 1936)

[2] P Fortunati, *Il ricambio sociale secondo indagini sulla struttura demografica della studentesca universitaria di Padova* (Ferrara, 1937), A de Polzer, *L'anagrafe della popolazione studentesca padovana* (Padova, 1942)

[3] A de Polzer, "Caratteristiche sociali dell studentesca padovana," in the review *Statistica*, No 4, 1948

TABLE XX

ITALY—LABOUR FORCE, 1936

(Taken from *The International Labour Office Year Book*, 1947–8)

Occupation	*Employers and Independent Workers*		*Salaried and Wage-earners*		*Unpaid Family Workers*		*Total*	
	Men	*Women*	*Men*	*Women*	*Men*	*Women*	*Men*	*Women*
I Agriculture and fishing	2,589,554	285,015	1,890,615	564,467	1,931,543	1,581,591	6,411,712	2,431,073
II Mining	4,610	34	120,499	2,057	1,216	30	126,325	2,121
III Manufacture, industry, and handcrafts	623,511	192,550	1,899,147	1,092,681	118,494	53,663	2,641,152	1,338,894
IV Construction	102,624	218	858,582	4,371	12,842	466	974,048	5,055
V Transport and communications	152,792	2,191	497,022	31,752	17,235	1,209	667,049	35,152
VI Commerce and finance	572,291	184,227	469,146	119,465	115,090	145,144	1,156,527	448,836
VII Professions and clergy	90,895	20,863	92,936	64,587	—	—	183,831	85,450
VIII Public and private administration	315	776	605,285	283,481	31	37	605,631	284,294
IX Domestic service	—	—	75,901	584,829	—	—	75,901	584,824
X Others	66,361	6,401	181,440	22,264	8,453	2,638	256,254	31,303
TOTAL	4,202,953	692,275	6,690,573	2,769,954	2,204,904	1,784,778	13,098,430	5,247,002

noted that children of pensioners or retired parents or orphans are not reclassified by occupations of their fathers. In the data of the University of Siena these gaps do not represent more than 4 54 per cent, as it was possible to classify almost all students according to the past occupations of their fathers, which allowed the construction of an almost complete table Concerning the grade within the occupation, it is known that statistics show a certain optimistic interpretation, as they are based on the declarations of the students, who tend to raise the actual status of their parents That is a general tendency in other countries as well, and not only in our own time What concerns the inquiry of the University of Siena is that the control investigation proved that if there are errors of this kind they are very limited

Finally, in classification by education one must point out that the group of those who enjoyed only primary education includes persons who completed their courses as well as those who attended primary schools for shorter periods, and even illiterates

Following the example of other Italian statistics, the data for the University of Siena do not take into account students who did not obtain their diplomas at the end of their normal period of studies, but who nevertheless continued to be regarded as students because they were still registered It relates to the group of retarded students, which varies considerably from faculty to faculty and which on the average amounts to 25 per cent of all students The elimination of these retarded students by Italian statistics no doubt is a source of errors in hasty comparisons with other countries.

(2) From Table XXI, one sees that the group of "liberal professions and education" surpasses in importance all other groups for both men and women students Combining this group (Group IX) with that of public administration (Groups V–VIII), we find that these groups supply almost half of men students and about 60 per cent of women students The relative distribution of students by their social origin varies from faculty to faculty In so far as it can be deduced from the three faculties of the University of Siena (Table XXII), one notices that whilst the figures for the faculties of law and pharmacy confirm or even accentuate the results of the whole university, in the faculty of medicine an especially high percentage of students (about 53 per cent) comes from groups engaged in industry and commerce (Groups I–IV). Women students of all faculties without exception are mainly supplied by the liberal professions and public administration group. It is characteristic in this respect that the agricultural occupations, whilst supplying a modest 13 per cent. of male students, furnish about 6 per cent of women students It is evident that academic education is a means of social rise among men, whilst among women it serves to preserve inherited social status. In general, the present precarious position of intellectual

TABLE XXI

NUMBER OF STUDENTS AT THE UNIVERSITY OF SIENA

Occupational Distribution of Fathers	Students														
	Male					Female					Total				
		Fathers having Education					Fathers having Education					Fathers having Education			
	Total	Primary or Illiterate	Secondary Intermediate	Secondary Higher	University	Total	Primary or Illiterate	Secondary Intermediate	Secondary Higher	University	Total	Primary or Illiterate	Secondary Intermediate	Secondary Higher	University
I Agriculture	66	44	10	10	2	8	5	—	3	—	74	49	10	13	2
II. Industry	91	67	16	6	2	13	10	2	1	—	104	77	18	7	2
III. Commerce	74	59	11	2	2	18	12	6	—	—	92	71	17	2	2
IV Communications and privately owned transport	18	13	2	3	—	2	1	—	—	1	20	14	2	3	1
V. Communications and State-owned transport	33	14	12	5	2	9	2	6	—	1	42	16	18	5	3
VI. Finance and insurance	24	5	9	6	4	11	—	7	3	1	35	5	16	9	5
VII Armed forces	25	7	6	9	3	8	3	3	1	1	33	10	9	10	4
VIII Civil Service	63	12	14	20	17	21	3	4	9	5	84	15	18	29	22
IX. Liberal professions and education	106	1	4	21	80	25	—	—	6	19	131	1	4	27	99
X. Private means	11	6	2	1	2	5	3	1	1	—	16	9	3	2	2
TOTAL	511	228	86	83	114	120	39	29	24	28	631	267	115	107	142
XI. Occupations unclassified	22					8					30				
TOTAL	533					128					661				

Note —The sign (—) means absent , the sign ( ) means no data

TABLE XXII —NUMBER OF STUDENTS AT THE UNIVERSITY OF SIENA

Faculties		Occupational Distribution of Fathers	Students								
			Male					Female			
				Fathers having Education				Fathers having Education			
			Total	Primary or Illiterate	Secondary Intermediate	Secondary Higher	University	Total	Primary or Illiterate	Secondary Intermediate	Secondary Higher	University
Law	I–IV	Agriculture, industry, and commerce	27	18	6	3	—	1	—	—	—	1
	V–VIII	Civil Service, armed forces, and finance	30	9	9	8	4	6	—	1	3	2
	IX	Liberal professions and education	18	—	—	3	15	5	—	—	1	4
	X	Independent means	—	—	—	—	—	1	—	1	—	—
		TOTAL	75	27	15	14	19	13	—	2	4	7
	XI	Occupations unclassified	6					1				
		TOTAL	81					14				
Medicine	I–IV	Agriculture, industry, and commerce	199	148	30	15	6	11	8	2	1	—
	V–VIII	Civil Service, armed forces, and finance	105	24	30	31	20	12	1	5	4	2
	IX	Liberal professions and education	67	—	4	16	47	8	—	—	3	5
	X	Independent means	9	5	1	1	2	—	—	—	—	—
		TOTAL	380	177	65	63	75	31	9	7	8	7
	XI	Occupations unclassified	9					—	—	—	—	—
		TOTAL	389					31	9	7	8	7
Pharmacy	I–IV	Agriculture, industry, and commerce	23	17	3	3	—	29	20	6	3	—
	V–VIII	Civil Service, armed forces, and finance	10	5	2	1	2	31	7	14	6	4
	IX	Liberal professions and education	21	1	—	2	18	12	—	—	2	10
	X	Independent means	2	1	1	—	—	4	3	—	1	—
		TOTAL	56	24	6	6	20	76	30	20	12	14
	XI	Occupations unclassified	7					7				
		TOTAL	63					83	..			

Note —The sign (—) means absent , the sign ( ) means no data

TABLE XXIII.—NUMBER OF STUDENTS AT THE UNIVERSITY OF SIENA

Occupational Distribution of Fathers	Students														
	Male					Female					Total				
	Fathers having Education					Fathers having Education					Fathers having Education				
	Total	Primary or Illiterate	Secondary Intermediate	Secondary Higher	University	Total	Primary or Illiterate	Secondary Intermediate	Secondary Higher	University	Total	Primary or Illiterate	Secondary Intermediate	Secondary Higher	University
I–IV AGRICULTURE, INDUSTRY, COMMERCE															
(1) Owners, directors, managers	57	27	16	11	3	15	8	3	3	1	72	35	19	14	4
(2) Farmer-owners, craftsmen, small businessmen	131	112	14	4	1	14	12	2	—	—	145	124	16	4	1
(3) Employees	25	10	7	6	2	7	4	2	1	—	32	14	9	7	2
(4) Workmen and other grades	36	34	2	—	—	5	4	1	—	—	41	38	3	—	—
	249	183	39	21	6	41	28	8	4	1	290	211	47	25	7
V–VIII CIVIL SERVICE, ARMED FORCES, FINANCE, AND INSURANCE															
(1) Directors	24	—	2	4	18	9	—	2	3	4	33	—	4	7	22
(2) Other grades	80	8	31	33	8	32	2	16	10	4	112	10	47	43	12
(3) Clerks	24	14	7	3	—	2	2	—	—	—	26	16	7	3	—
(4) Lower personnel	17	16	1	—	—	6	4	2	—	—	23	20	3	—	—
	145	38	41	40	26	49	8	20	13	8	194	46	61	53	34
IX LIBERAL PROFESSIONS AND EDUCATION	106	1	4	21	80	25	—	—	6	19	131	1	4	27	99
X. INDEPENDENT MEANS	11	6	2	1	2	5	3	1	1	—	16	9	3	2	2
TOTAL	511	228	86	83	114	120	39	29	24	28	631	267	115	107	142
XI. OCCUPATIONS UNCLASSIFIED	22					8					30				
TOTAL	533					128			..		661	..			

groups compels women of these groups as well as men to secure status by the acquisition of an academic degree. In addition, academic studies promote a spirit of independence which is more and more active among the urban groups of modern women.

The results of the inquiry concerning the positions of fathers within each group are given for a limited number of grades in Table XXIII.

It is noticeable that in the hierarchy of public services as well as in that of industrial occupations it is the intermediate group of families (owner-farmers, artisans, retail shopkeepers, and employees of intermediary grades) which is largely represented among the students. The lower groups, such as the agricultural and industrial workers, lower office personnel, supply not more than 10 per cent. of men and 8 per cent of women students. But it would be a mistake to conclude from these figures that social rise takes place in Italy only among 10 per cent of the academic population One should take into account also children of lower-grade employees, non-commissioned officers, and some of the employees of private concerns, which would double the percentage of movement for social rise Furthermore, it is quite probable that the examination of students' declarations would reclassify a good number of independent artisans and workers, who appear in Table XXIII among the intermediary groups, into the lower rung of the social ladder from the point of view of their economic position.[1]

Secondly, it is a known fact that social rise is not accomplished by a single generation. An individual with only a primary education, or even an illiterate, is followed by a son with intermediate secondary education and a social status which permits his children to follow up academic education without much difficulty. The data at our disposal on the social rise within one generation do not give us sufficient information on this phenomenon

If we examine the group of directors and managers according to their education, we can state (Table XXIII) that in public administration the graduates constitute two-thirds of all fathers, whereas in industrial groups they number only 6 per cent. If we could be sure that those who occupy the managing posts in all fields presented the same percentage with academic education as the fathers of students in our statistics, we should find that the level arrived at in the intellectual hierarchy does not necessarily correspond to the level in the economic or occupational hierarchy.

(3) To make possible a comparison between the data for Siena and other universities, I have prepared Tables XXIV–XXVI, including data for Padua and all Italian universities (1931–2). It is

[1] The classification of the graduates of Padua based on the occupation and education of fathers has shown that agricultural and industrial workers, shopkeepers, lower personnel, all of whom had only primary education, form 31 per cent of fathers of all graduates

necessary to point out that these comparisons could not be quite adequate, as the data for other universities include only about 75 per cent. of students and the children of retired fathers or orphans are partly included in the unclassified group. I must also add that the validity of comparison is probably diminished by the fact that the total figures for Italy hide the different tendencies of separate universities, which have local features. For instance, the existence of an Institute of Finance at Siena explains the comparatively considerable number of sons of employees of banks. Besides, whilst the figures for Italy embrace all faculties of all universities, the figures for Padua relate only to seven faculties and those of Siena only to three faculties And the entrants to various faculties differ considerably in their social origin, as I have mentioned before. These reservations make one rather uncertain of the validity of the deductions made from the combined data of these three tables, that (*a*) there has been an important increase of students coming from the groups of agriculture, industry, and public services, (*b*) that there is a stationary situation for the children of merchants, (*c*) that there is a noticeable tendency towards the proportional decrease

TABLE XXIV

PERCENTAGES OF OCCUPATIONS OF FATHERS OF STUDENTS AT ITALIAN UNIVERSITIES

Fathers' Occupations	*Male Population of Italy over 10 Years at 21/4/1936*	*University*				
		Siena, 1947–8			*Padua*, 1933–4	*Italy*, 1931–2
		Male	*Female*	*Total*	*M & F*	*M & F*
	%	%	%	%	%	%
I Agriculture	39 22	12 38	6 25	11 20	6 02	4 13
II. Industry	24 79	17 07	10 16	15 73	11 54	7 08
III. Communications and transport under private control	2 90	3 38	1 57	3 03		0 85
IV Commerce	6 61	13 88	14 07	13 92	16 66	12 43
V. Finance and insurance	0 55	4 51	8 57	5 29		1 68
VI Armed forces	1 22	4 69	6 25	4 99	9 30	1 72
VII Civil Service .	2 40	11 82	16 41	12 71		10 64
VIII Communications and transport under State control	1 22	6 19	7 03	6 35	9 30	
IX Liberal professions and education	0 97	19 89	19 53	19 82	24 61	24 13
X People of independent means	0 87	2 06	3 91	2 42	5 40	9 15
XI Other occupations and unclassified	19 25	4 13	6 25	4 54	26 47	28 19

of children of members of liberal professions and of people of independent means. It is questionable whether this last decrease is a sign of the gradual disappearance of the class of people of independent means or is the result of a tendency among the students to attribute to their fathers the management, rather vague, of their enterprises. I shall attempt to give an answer to this question in a special study, which is in preparation, after the control investigation

TABLE XXV

PERCENTAGES OF DISTRIBUTION BY GRADES WITHIN OCCUPATIONS OF FATHERS OF STUDENTS AT UNIVERSITY OF SIENA

Fathers' Occupational Grades	*Male Population of Italy over 10 Years at 21/4/1936*	*Fathers of Students of University of*	
		Siena 1947–8	*Italy* 1931–2
	%	%	%
I AGRICULTURE			
(1) Land-owners	1 17	4 54	3 50
(2) Farmer-owners	19 00	3 94	
(3) Farmer-tenants	7 73	—	0 17
(4) Employees	0 22	1 36	0 25
(5) Agricultural workers	11 10	1 36	0 21
II–III PRIVATELY-OWNED INDUSTRY, TRANSPORT, ETC			
(1) Owners, directors, managers	1 69	3 18	5 66
(2) Craftsmen and small businessmen	5 28	8 93	
(3) Employees	1 38	2 72	1 16
(4) Workers	19 34	3 93	1 11
IV. COMMERCE			
(1) Owners, directors, managers	4 30	3 17	11 33
(2) Retail shopkeepers		9 08	
(3) Employees	1 22	0 76	1 08
(4) Workers	1 09	0 91	0 02
V FINANCE AND INSURANCE			
(1) Directors	0 04	1 36	1 68
(2) Other employees	0 43	3 48	
(3) Lower personnel	0 08	0 45	
VI–VIII CIVIL SERVICE, ARMED FORCES AND STATE-CONTROLLED TRANSPORT			
(1) Directors, higher ranks	0 07	3 63	11 87
(2) Other grades	2 25	12 10	
(3) Clerks		5 29	
(4) Lower personnel	2 52	3 03	0 49
IX LIBERAL PROFESSIONS AND EDUCATION			
(1) Liberal professions, independent	0 68	14 37	19 33
(2) University professors	0 29	0 30	3 09
(3) Secondary school masters		3 18	
(4) Primary school teachers		1 97	1 71
X. INDEPENDENT MEANS	0 87	2 42	9 15
XI OTHER OCCUPATIONS AND UNCLASSIFIED	19·25	4 54	28 19

of the data for Siena University is completed. The different proportional importance of occupational groups which contribute to the formation of the university population gives us an idea of the mobility from the lower classes to the upper groups, but it does not inform us about the importance of social rise in relation to social origin In a rough manner (*grosso modo*) the data of the census of April 21st, 1936, on occupational distribution of Italian population, gives an indication These distributions in percentages are given in Tables XXV–XXVII.

The proportion of students belonging to the groups engaged in economic activities, especially in agriculture, although giving an evidence of general increase, is still much inferior to the proportion of the same occupations in the total Italian male population An opposite feature is noticed in the groups of public administration, people of independent means, and especially among the liberal professions As a result, whilst the proportion of male population engaged in liberal professions or having independent means does not constitute more than 7 per cent of the total population, the students from these groups form about half of all students, Tables XXV and

TABLE XXVI

PERCENTAGES OF OCCUPATIONAL DISTRIBUTION OF FATHERS OF STUDENTS AT ITALIAN UNIVERSITIES

Occupational Distribution of Fathers	*Male Population of Italy over 10 Years at 21/4/1936*	*Fathers of Students at the University*		
		Siena 1947–8	*Padua* 1938–9	*Italy* 1931–2
	%	%	%	%
I Industrial workers, lower personnel, tenants, and agricultural workers	41 86	9 68	3 08	1 71
II Farmers-owners	19 00	3 94	6 85	3 50
III Artisans	4 68	7 42	2 96	1 24
IV Small business in transport	0 60	1 51		1 24
V Retail shopkeepers	7 16	9 08	1 47	15 75
VI Directors and managers in industry, transport, finance, and agriculture		10 89	6 45	
VII Salaried employees				
Higher grades	0 11	4 99	23 76	16 33
Other grades	5 50	20 42		
VIII Clerks, etc		5 29	4 61	
IX Liberal professions	0 97	19 82	16 29	24 13
X Independent means	0 87	2 42	5 66	9 15
XI Other occupations and unclassified	19 25	4 54	28 87	28 19

TABLE XXVII

NUMBER OF STUDENTS AT THE UNIVERSITY OF SIENA ACCORDING TO NUMBER OF CHILDREN IN THE FAMILY

Number of Children in the Family	*Students*														
	Male					*Female*					*Total*				
		Fathers having Education					*Fathers having Education*					*Fathers having Education*			
	Total	*Primary or Illiterate*	*Secondary Intermediate*	*Secondary Higher*	*University*	*Total*	*Primary or Illiterate*	*Secondary Intermediate*	*Secondary Higher*	*University*	*Total*	*Primary or Illiterate*	*Secondary Intermediate*	*Secondary Higher*	*University*
Only child in the family	116	53	18	24	21	27	12	7	1	7	143	65	25	25	28
Having brothers or sisters below ages for university attendance	89	29	21	14	25	22	8	4	5	5	111	37	25	19	30
Having brothers or sisters of university age — who did not attend	179	112	25	23	19	28	10	9	6	3	207	122	34	29	22
Having brothers or sisters of university age — who are students or graduates	127	34	22	22	49	43	9	9	12	13	170	43	31	34	62
TOTAL	511	228	86	83	114	120	39	29	24	28	631	267	115	107	142

XXVI allow us to study these characteristic features in a more detailed manner. I will limit my observation to the fact that among the agricultural and industrial workers and the lower employees, the latter (including those of railways) are in a more favourable position for sending their children to the universities

(4) If one speaks about the rush of youth towards the universities it is important to state precisely which of the social groups contribute to it mostly. Are those who have more than one child of university age sending to the university only one of these children, or do they endeavour to give an opportunity for academic study to as many as possible? Table XXVII gives us some indication in this respect Out of 631 students of the University of Siena who answered all the questions of the inquiry, only 377 had brothers and sisters over 18 years of age, the usual age of attending universities Of these, 45 06 per cent have brothers or sisters either students or graduates. If we analyse these figures in relation to the education of fathers, we find that only 26 6 per cent. of fathers with primary education have more than one child at the university This percentage rises to 47 69 for fathers with secondary intermediate education, to 53 97 per cent for fathers with higher secondary education, and to 73 81 per cent for fathers with university education These data show that among the lower groups the movement of social rise through academic studies is usually limited to one child only, whilst among the cultured groups the rule is to send most of the children to the university. Academic training becomes, so to speak, a hereditary feature in this case One should add that sons have a tendency to study in the faculty which their fathers attended

The figures of Table XXVIII show that in the three faculties of Siena the same feature can be observed Especially is this noticeable among the children of physicians, chemists, and lawyers

TABLE XXVIII

Fathers Graduates in	*Faculties in which the Sons Are Enrolled*			
	Law	*Medicine*	*Pharmacy*	*Total*
Law	10	15	5	30
Social sciences	1	—	—	1
Economics and commerce	1	6	1	8
Medicine	5	37	11	53
Veterinary	1	3	2	6
Chemistry and pharmacy	1	8	11	20
Others	7	13	4	24
TOTAL	26	82	34	142

THE NETHERLANDS

Education and Occupational Distribution in the Netherlands

Dr J. de Bruijn has given in his article a detailed analysis of the social origin of secondary school pupils and university students. For convenience we repeat here the table on the distribution of the labour force by occupations given on page 444.

TABLE XXIX

LABOUR FORCE ON MAY 31ST, 1947

	Number	*Percentage*
Industry	1,428,120	37
Agriculture and fisheries	770,185	20
Distributive trades, transport, banking and insurance	914,257	24
Social services	404,487	10
Education	91,084	2
Cultivation, domestic services and unknown	258,344	7
TOTAL	3,866,477	100

The next table, specially prepared for this volume, gives the percentages of students by occupations of their fathers The data were based on information from about 80 per cent. of all students in all higher institutions. The total number of students in 1947–8 was 26,000.

TABLE XXX

THE NETHERLANDS STUDENTS IN THE YEAR 1947–8, ACCORDING TO FATHERS' OCCUPATIONS

(*Supplied by Dr Ph J Idenburg, Director-General of the Netherlands Central Bureau of Statistics, The Hague*)

Fathers' Occupations	*Percentage of Students*
(1) Members of higher colleges of State, higher-grade personnel in Government and railroad services	5 3
(2) Burgomasters, town clerks, municipal treasurers, aldermen in larger towns	1 2
(3) Officers, higher-grade police officers	2 0
(4) Members of judicature, barristers and solicitors	1 6
(5) Professors, lecturers	1 1
(6) Clergymen and other ministers of religion	1 6
(7) Medical men, dentists, veterinary surgeons, chemists	6 4
(8) Notaries, notaries awaiting appointment, chartered accountants	2 1
(9) Leaders of social institutions and museums (political movement, trade union)	0 3
(10) Leaders of limited liability societies and co-operative societies, manufacturers	8 6
(11) Engineers, architects, artists (exclusively independent)	2 0
(12) Teachers Preparatory higher and secondary education, training colleges, second-grade technical schools, and other technical education day schools	5 0
(13) Higher-grade clerical and technical personnel in trade, industry, banking, insurance companies, navigation, and journalism	6 9
TOTAL OF HIGHER-GRADE OCCUPATIONS (Groups 1–13)	44 1
(14) Medium clerical and technical personnel in Group 13	8 4
(15) Medium civil personnel in State and railway services	8 8
(16) Teachers (not included in Groups 5 and 12)	7 4
(17) Independent agriculturists and growers	4 3
(18) Independent occupations, heads of smaller concerns, shopkeepers	13 6
(19) Businessmen (without any further indication)	1 4
(20) Solicitors, bailiffs, experts, valuers, agents, commercial travellers, etc (liberal occupations)	2 8
TOTAL OF MEDIUM OCCUPATIONS (Groups 14–20)	46 8
(21) Lower-grade clerical and technical personnel in Group 13	2 9
(22) Lower-grade clerical and technical personnel in State and railway services	2 5
(23) Military men below the rank of officers, State and municipal police (not included in Group 3)	0 6
(24) Labourers (both industrial and in agriculture)	1 0
TOTAL OF LOWER GRADE OCCUPATIONS (Groups 21–24)	6 9
(25) Without any occupation	0 5
(26) Unknown	1 7
GRAND TOTAL	100 0

SWITZERLAND

Social Origin of Swiss Students

The following tables were compiled by the Editors from the official publications of the Federal Statistics Bureau, *Die Studierenden an Schweizerischen Hochschulen,* for 1936 and 1946, which were sent by Professor Dottrens. The occupational distribution of the Swiss population was taken from the *International Labour Office Year Book, 1947–8*

The tables show that Switzerland has not changed the distribution of students by social origin during the period 1935–45. Although the liberal professions have slightly decreased their percentage (Table XXXIV) from 38 per cent to 34 7 per cent, they are still the largest group from which the students are recruited. The clerks and employees have increased their percentage from 29 9 per cent to 32·9 per cent, but the workers have an even smaller percentage (4 9 per cent) in 1945 than in 1935 (5 3 per cent). There are no signs of the urge for social rise from the bottom rung of the ladder noticeable in this country. As in other countries, academic education has become hereditary and the small amount of public assistance to poorer students can hardly promote the further democratisation of higher learning.

TABLE XXXI

NUMBER OF SWISS STUDENTS BY THE SIZE OF FAMILY, 1945

Number of Children in Family	*Universities*	*Technical High Schools*	*Total*	*Of whom Women*
Single	1,469	410	1,879	268
2 children	3,096	1,028	4,124	538
3 children	2,243	731	2,974	365
4 children	1,277	449	1,726	175
5 children	607	201	808	77
6 children	329	111	440	27
7 children	215	61	276	17
8–9 children	194	51	245	15
10 children plus	123	30	153	6
Unknown	4	2	6	—

Of whom 6,099 are first child (50 per cent), 3,487 second child, and 1,572 third child

TABLE XXXII

SWISS LABOUR FORCE IN 1941

Occupations	*Employers and Independent Workers*		*Salaried Employees and Wage-earners*		*Unpaid Family Workers*		*Total*	
	Men	*Women*	*Men*	*Women*	*Men*	*Women*	*Men*	*Women*
Agriculture and forestry	175,720	13,887	104,561	3,600	104,518	12,650	384,799	30,137
Mining	480	10	6,776	108	88	5	7,344	123
Manufacture, industry, and handicrafts	77,896	26,583	432,414	171,030	10,078	4,944	520,388	202,557
Construction	19,151	251	114,426	1,530	2,004	221	135,581	2,002
Transport and communications	4,227	105	65,603	6,178	595	33	70,425	6,316
Commerce and finance	38,928	13,047	85,945	51,839	3,079	5,634	127,952	70,620
Hotels, etc	11,334	13,835	13,828	40,701	1,028	4,243	26,190	58,779
Public administration and professions	20,641	10,841	80,020	34,266	504	1,181	101,165	46,288
Domestic service and day labour	6	1	5,872	114,934	—	—	5,878	114,935
Institutions with resident staff	646	388	18,137	34,097	—	—	18,783	34,485
Unspecified	—	—	—	—	—	—	23,767	4,073
TOTAL	349,029	78,948	927,582	458,283	121,894	28,911	1,422,272	570,315

TABLE XXXIII

DISTRIBUTION OF SWISS STUDENTS BY SELECTED OCCUPATIONS, 1945

Academic Professions	*No of Fathers 40–59 Years, Census 1941*	*No of Students, 1945*	*Percentage of Fathers*	*Percentage of Students*	*Percentage of Students to Fathers*	*Total Number, Census 1941*
Lawyers	953	321	0 8	3 9	33	2,463
Physicians	1,711	621	1 4	7 6	36	4,317
Dentists	720	117	0 6	1 4	16	1,792
Veterinary	292	74	0 2	0 9	25	621
Chemists	1,097	297	0 8	1 2	27	2,942
Academic teachers	287	164	0 2	2 0	57	700
Secondary school masters	2,019	430	1 6	5 3	21	5,238
Primary school teachers	4,288	584	3 4	7 2	14	—
Clergy	678	268	0 5	3 3	40	4,750
Artists and writers	725	61	0 6	0 8	8	—
Engineers	2,274	664	1 8	8 1	29	5,341
Architects	1,416	271	1 1	3 3	19	2,775
TOTAL ACADEMIC	16,460	3,872	13 0	45 0	24	
Army officers	225	43	0 2	0 5	19	
Pharmacists	348	39	0 3	0 5	11	
Technicians	3,249	235	2 6	2 9	7	
Chartered accountants	418	57	0 3	0 7	14	
Bakers, butchers, tailors	8,979	206	7 2	2 5	2 3	
Other craftsmen and artisans	26,096	160	20 7	2 0	0 6	
Business firms' employees	50,753	2,764	39 4	33 3	5 4	
Police	2,174	70	1 7	0 9	3 2	
Railway employees	10,820	291	8 6	3 6	2 7	
Post-office employees	8,350	470	5 9	5 8	5 8	

Graduate Parents —3,498 students had fathers graduates, 207 had mothers graduates, 501 had both parents graduates, 688 had grandparents graduates 4,894 students came from academic families

Total number of women in academic professions, 2,267, of whom 1,256 were teachers in secondary schools and 622 were in the medical profession

TABLE XXXIV

SWISS STUDENTS DISTRIBUTED BY OCCUPATIONS OF FATHERS

Occupations	1945					1935					Increase 1935–45 Per cent
	Universities		Technical Higher Schools	Total	Percentage	Universities		Technical Higher Schools	Total	Percentage	
	Men	Women				Men	Women				
LIBERAL PROFESSIONS	2,739	610	1,117	4,466	34 7	1,693	413	597	2,703	38 0	165
Of which independent	1,073	287	409	1,769		635	164	250	1,049		
INDEPENDENT IN											
Agriculture	408	21	187	616		299	16	74	389		
Industry, arts and crafts	730	122	374	1,226		460	89	171	720		
Commerce and finance	640	140	269	1,049		397	87	129	613		
Hotels, restaurants, etc	148	12	39	199		82	11	21	114		
Others	53	8	18	79		8	4	3	15		
TOTAL INDEPENDENT	1,979	303	887	3,169	24 6	1,246	207	398	1,851	25 7	172
CLERKS AND EMPLOYEES											
Public service	732	83	282	1,097		397	83	89	569		
Railways	334	38	103	475		235	16	46	297		
Post office	347	35	98	480		172	20	38	230		
Private business employees	1,392	213	573	2,178		706	114	234	1,054		
TOTAL EMPLOYEES	2,805	369	1,056	4,230	32 9	1,510	233	407	2,150	29 9	196
Workers	475	30	121	626	4 9	299	31	56	386	5 3	162
All others	211	36	146	393	3 0	71	21	22	114	1 5	345
GRAND TOTAL	8,209	1,348	3,327	12,884	100 0	4,819	905	1,480	7,204	100 0	177
Foreign students	1,384					1,626					

TABLE XXXV

SWISS STUDENTS BY FACULTIES (FOREIGNERS EXCLUDED)

Faculties	1935				1945				*Increase per cent* 1935–45
	Men	*Women*	*Total*	*Percentage of Grand Total*	*Men*	*Women*	*Total*	*Percentage of Grand Total*	
Theology	397	28	425	6 1	471	40	511	4 0	120
Law	1,220	126	1,346	19 3	1,711	126	1,837	14 5	136
Economics	391	52	443	6 3	1,229	107	1,336	10 6	301
Medicine	973	200	1,173	16 9	1 683	272	1,955	15 4	167
Dentistry	304	51	355	5 1	335	38	373	2 9	105
Veterinary	74	1	75	1 1	210	2	212	1 7	283
Arts	698	325	1,023	14 7	1,149	530	1,679	13 1	164
Science	792	124	916	14 0	1,421	233	1,654	12 9	181
Technical branches	1,096	63	1,159	16 6	2,654	126	2,780	22 0	240
Commerce	56	5	61	0 9	280	14	294	2 3	482
GRAND TOTAL	6,001	975	6,976	100 0	11,143	1,488	12,631	100 0	180

Note —Statistical data, 1945, include 89 per cent of all students The total number was 16,429, of which 2,364 were foreigners

TABLE XXXVI

ASSISTED STUDENTS, SWISS, 1945

	Exemption from Fees	*Scholarships*	*Loans*	
			Academic Authority	*Private*
Universities	670	731	55	322
Technical higher schools	198	212	31	111

All kinds of assistance—2,330, or 17 per cent of all Swiss students

UNITED STATES OF AMERICA

Tables and Note supplied by Robert J Havighurst

The "number of workers" is the number in the labour force It excludes children and old people who are not employed, and housewives The proportions of the sexes in the labour force in 1940 was male, 75 3 per cent, and females, 24 7 per cent

A "university student" is defined as a person who has completed secondary school and is enrolled full-time in some institution requiring graduation from secondary school as a basis for admission. In 1939 it included 1,390,000 students in the first four years of university education (age, approximate, 18–21), and 104,000 "graduate students", or students who had completed four years of college work and were pursuing studies in graduate and professional schools

The increase in student enrolments in 1947 over 1939 is mainly due to the fact that many students who had "lost time" in their education during World War II were still in college beyond the usual age of graduation, and in some measure also due to the fact that Government grants were available to men and women who had served in the armed services and who wished to continue their education. It is estimated that from 15 to 20 per cent. of the increase in enrolment consists of young men and women who would not have gone to college if they had not had Government assistance.

Note that the university enrolment figures *do not* include students who attended during the summer only, or during evenings, and who were employed full-time during most of the year.

TABLE XXXVII

DISTRIBUTION OF POPULATION ACCORDING TO SOCIAL STATUS

Total population of U S A 1939—131,667,000 , 1947—144,002,000

Year	*Independents and Employers of Labour*	*Civil Servants and Professional Classes*	*Retail Shopkeepers and Artisans*	*Agricultural Population*	*Other Workers*					*Total Labour Force*
	Persons of independent means, company directors, etc	*Clergy, physicians, lawyers, teachers, army, navy, air forces, Civil Service, etc*	*Retail shopkeepers, one-man business, skilled workmen in own business*	*Farm and landworkers employed by landowners or self*	*Craftsmen, foremen carpenters, bakers, machinists, electricians, etc*	*Clerical workers, bookkeepers, stenographers, cashiers, office clerks, etc*	*Sales workers, salesmen in shops, insurance agents, real-estate salesmen, travelling salesmen*	*Factory workers, labourers, service workers*	*Unclassified*	
1939	2,214,000	3,988,000	2,141,000	8,400,000	5,880,000	5,300,000	3 400,000	19,500,000	1,200,000	52,020,000
Percentage	4 3	7 7	4 1	16 1	11 3	10 2	6 5	37 5	2 3	100
1947	2,525,000	5,115,000	2,285,000	9,320,000	7,000,000	6,500,000	4,100,000	22,200,000	1,205,000	60,168,000
Percentage	4 2	8 3	3 8	15 5	11 6	10 8	6 8	37 0	2 0	100

DISTRIBUTION OF UNIVERSITY STUDENTS ACCORDING TO SOCIAL STATUS OF PARENTS

1939	290,000	390,000	100,000	144,000	170,000	120,000	80,000	200,000	—	1,494,000
Percentage	19 4	26 1	6 7	9 6	11 3	8 0	5 3	13 3	—	100
1947	430,000	580,000	150,000	230,000	340,000	190,000	120,000	300,000	—	2,340,000
Percentage	18 4	24 8	6 4	9 8	14 6	8 1	5 1	12 9	—	100

In addition to tables supplied by R J Havighurst, we give information sent by Milton C. Forster, Acting Chief, Research Division, Veterans Administration, Washington

The American Council on Education recently conducted a nationwide survey on the "Factors Affecting the Admission of High School Seniors to College". The sample was drawn from the total of white students in the 1947 high school graduating classes in the United States. One question asked of the respondents in this study was "What is your father's occupation (or his last occupation if not living)?" The table attached hereto, derived from a table in this publication, shows a percentage distribution according to the occupational status of the fathers of respondents who were admitted to at least one college.

Percentage distribution by occupational status of fathers of students in 1947 high school graduating classes in the United States admitted to at least one college

Occupational Status of Father	*Per cent*
Professional and executive	25 4
Small business proprietor	16 2
Office worker	18 1
Service trades worker	11 5
Factory and other worker	12 9
Farmer	7 9
Other	8 0
	100 0

Source —Derived from a table on page 143 of *Factors Affecting Admissions of High School Seniors to College* (American Council on Education, 744 Jackson Place, N W , Washington, D C)

UNION OF SOVIET SOCIALIST REPUBLICS

The Editors regret that the articles on the Soviet Union were not received in time for publication of the volume, owing to technical difficulties. As the figures for social distribution of students in the U S S R are of great importance for comparative study of the problem, the Editors add this information based on the data published in the *Sovietskaia Entsiklopedia,* 1949. The students enter the universities and higher technical institutes through two channels About 60 per cent of the students are graduates of the ten-year secondary schools who, after matriculation, are accepted by various faculties in accordance with the results of additional tests, specific for each faculty. About 40 per cent. of the students are graduates of the evening secondary schools for young workers and peasants, who have to pass the same examinations and tests The approximate distribution of students by social status of their fathers is therefore about 50 per cent children of civil servants and men in managerial posts in industry and agriculture, and about 50 per cent children of workers and peasants The Table (XXXVIII) gives the occupational distribution of the labour force taken from *Sovietskaia Entsiklopedia.* The total number of students in 1949 was 774,500.

TABLE XXXVIII

The population of U S S R Census 1939 *in* 000 *Including families*

	Number	*Per cent*
Industrial and agricultural workers	56,660	34 2
Civil service	29,738	17 5
Collective farmers	75,616	44 6
Co-operated artisans	3,388	2 3
Independent artisans	1,396	0 8
Independent farmers	3,018	1 8
Unemployed	60	0 04
Unclassified	1,235	0 7
TOTAL	169,519	100

Distribution of Workers and Civil Servants (without families) in 1938 *U S S R.*

Industry	10,111,700
Building	2,023,200
Transport	2,773,800
Agriculture	2,482,000
Education	2,303,000
Health	1,117,600
Trade	993,000
State and Public Departments	1,743,300
Salaried and wage-earners TOTAL	26,989,500

TABLE XXXIX

Number of Students, 1949

Republic	*No of Institutions (approx)*	*No of Students (approx)*	*Per 10,000 Population*
R S F S R	481	474,700	44
Ukraine	159	137,200	34
White Russia	28	17,900	17
Uzbekistan	35	29,000	46
Georgia	20	21,000	60
Azerbajan	18	20,000	62
Kazakhstan	23	17,000	28
Lithuania	12	12,000	41
Latvia	11	9,000	45
Estonia	8	6,000	53
Armenia	14	5,000	40
Remaining five Republics Karelo-Finnish, Moldavian, Turkmenistan, Tadjikistan, Kirghirstan	28		—
TOTAL, U S S R	837	774,500	40

University Correspondence Courses 346,000

Taken from *Vestnik Vysshei Shkoly* (Review of Higher Education) and other official sources

There are 33 universities with 70,000 students 12 in R S F R S , 7 in the Ukraine , 2 in Uzbekistan , 2 in Lithuania, and one each in White Russia, Georgia, Azerbajan, Latvia, Estonia, Armenia, Kazakhstan, Karelo-Finnish R , Moldavia and Tadjikistan The remaining institutions are special institutes Medical, 96 , Technological and Engineering, 171 , Agriculture and allied branches, 87 , Law and Economics, 35 , Teachers' Training, 231,, and Fine Arts and Music, 47

COMPARISON OF NINE COUNTRIES

The comparison of statistical data in the field of education is still in its initial stage of development The terminology is not yet internationally standardised, and identical terms may mean different things in different countries, even if the same language is used. There is no generally recognised equivalence of educational values as expressed by certificates, diplomas, or degrees, and even the demarcation lines between primary, secondary, and higher education are not exactly identical in various countries But when we deal with social groups and the distribution of students by their origin we meet additional difficulties. There are two main methods of classification of population by groups. One distributes population by industrial occupations into the groups occupied in agriculture, mining, manufacturing industry, commerce and trade, transport, and public services, to name only the most important By this distribution the landowner and the agricultural worker will be in one group and the owner of a steamship company and the sailor in another The second method distributes population by social-economic status irrespective of the branch of industry. By this method all employers of labour would be in one group and all factory workers in another Neither method is foolproof, and there are not only many individuals but whole groups of population which it is difficult to classify in either way. The old-fashioned division into "upper", "middle", and "lower" classes has lost its traditional significance and is meaningless, since in some countries the old "upper" class disappeared altogether, while many groups of the "lower" class have more power and a higher income than some groups of the "middle" class The division into "brain workers" and "manual workers" is losing its significance very fast, for the modern mechanic has to use his brains while the typist uses her hands In education these divisions have also become obsolete

Having said this much we now have to justify our procedure As M Rosier said in his Note on France, the best classification of students' parents would be by their incomes and their ability to defray the costs of higher education However, these statistics are not available anywhere and the policy adopted by some Governments of awarding maintenance grants to the majority of students makes this classification unrepresentative The fact remains that people of independent means and members of the liberal professions send their sons and daughters to the universities by a long-established tradition, irrespective of whether or not the Government gives grants Members of the out-dated "middle" classes still have the old urge to rise socially and will accept considerable hardships in order to send their children to universities. Farmers and the higher grades of skilled labour, in spite of their comparatively

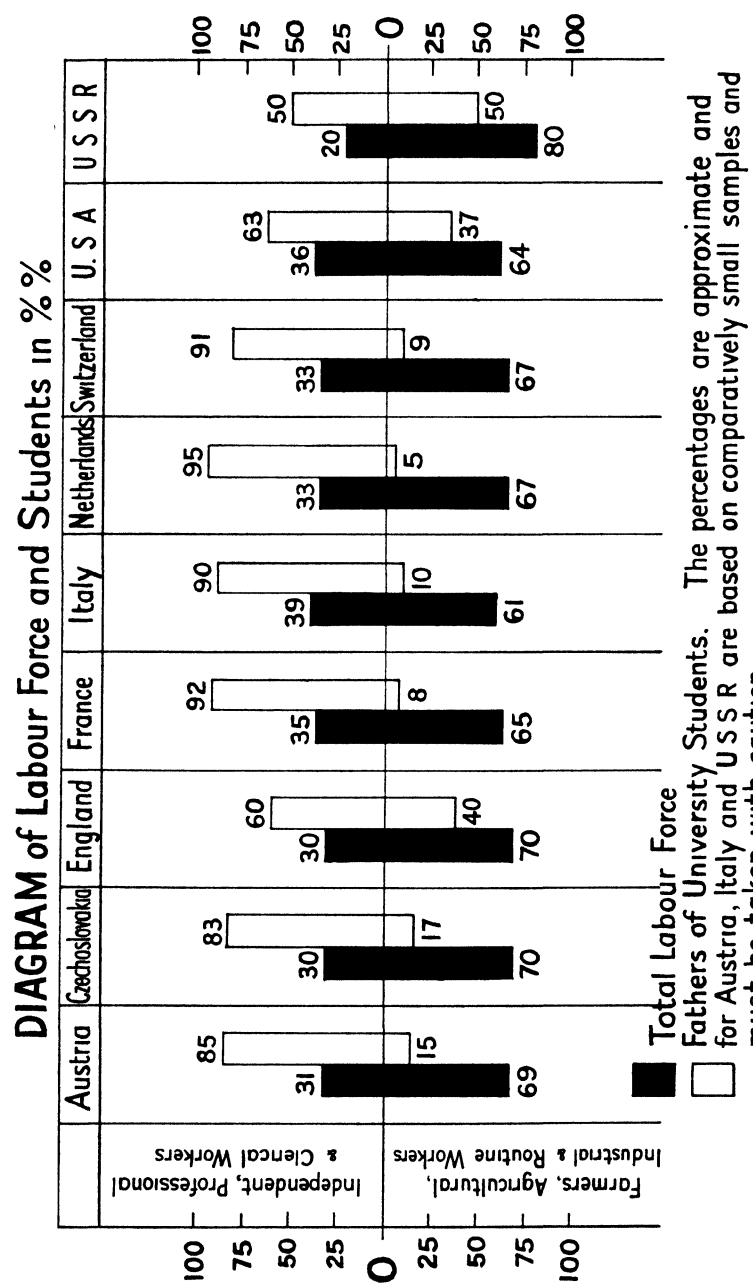


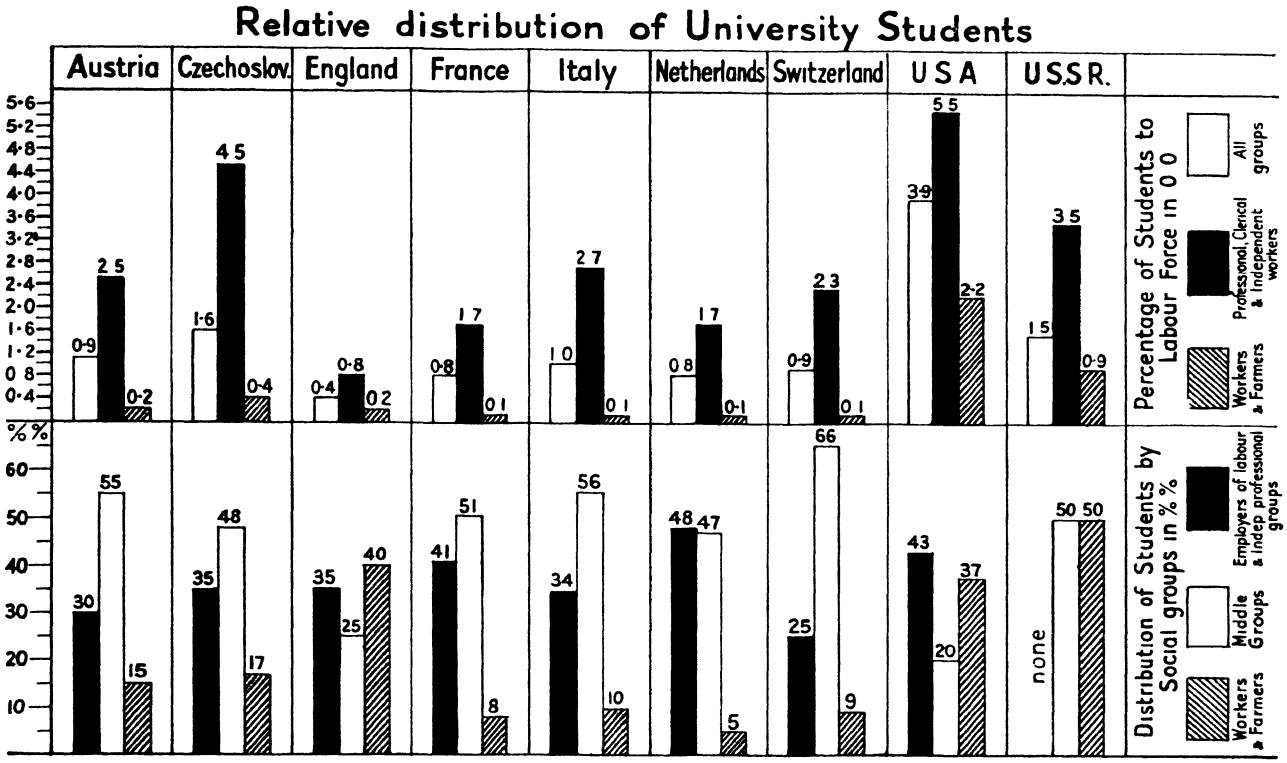
DIAGRAM of Labour Force and Students in %%
Austria
Czechoslovakia
England
France
Italy
Netherlands
Switzerland
U.S.A
U.S.S.R
Independent, Professional & Clerical Workers
Farmers, Agricultural, Industral & Routine Workers
100 75 50 25 0 25 50 75 100
85 15 31 69
83 17 30 70
60 40 30 70
92 8 35 65
90 10 39 61
95 5 33 67
91 9 33 67
63 37 36 64
50 50 20 80
Total Labour Force
Fathers of University Students.
The percentages are approximate and for Austria, Italy and U S S R are based on comparatively small samples and must be taken with caution

TABLE XL

Social Distribution of Labour Force and University Students by Groups in Percentages

Countries	Austria		Czecho-slovakia		England		France		Italy		Netherlands		Switzerland	USA		USSR.	
Social Groups	LF 1939	US 1946	LF 1947	US 1947	LF 1947	US 1947	LF 1948	US 1948	LF 1936	US 1947	LF 1948	US 1948	LF 1941	US 1945	LF 1947	US 1947	LF 1939	US 1939
Employers of labour, directors, and people of independent means	8	30	5	19	6	35	5	23	6	16	4	11	7	11	4	18	—	—
Independent liberal professions			5	16	3		4	18	1	20	9	37	7	35	9	25	—	—
Civil Service, officers of armed forces, and assimilated	23	55	10	38	15		10	28	3	23		20		16			17	50
Lower clerical and office employees			10	9		20	10	10	6	8	10	11	13	17	17	13		
Retail shopkeepers, independent artisans			included in ind group		4		5	5	8	18	10	14		10	4	6	3	
Farmers, independent and collective	12	7	20	10	2		20	5	27	4	8	4	8	4	11	10	46	20
Agricultural workers	11	8			3	40	5	1	11	1	12	1	5	5	5		5	
Workers in industry, trade, and transport	46		50	7	67		40	2	23	5	47		60		48	27	30	30
Unclassified	—	—	—	1	—	5	—	8	15	5	—	2	—	2	2	1	—	—

The percentages are approximate and the distribution into social groups may vary from country to country, but the three last groups farmers, agricultural workers, and industrial workers, are clearly identified in all countries and represent the actual relative strength of these groups The unclassified as a rule belong to the middle groups Distribution of students for Austria, Italy, and U S S R are based on comparatively small samples and must be taken with caution.


Relative distribution of University Students
Austria
Czechoslov.
England
France
Italy
Netherlands
Switzerland
U S A
U.S.S.R.
Percentage of Students to Labour Force in 0 0
All groups
Professional, Clerical & Independent workers
Workers & Farmers
Distribution of Students by Social groups in %%
Employers of labour & indep professional groups
Middle Groups
Workers & Farmers
0·9 2 5 0·2
1·6 4 5 0·4
0·4 0·8 0 2
0·8 1 7 0 1
1 0 2 7 0 1
0 8 1 7 0·1
0·9 2 3 0 1
3·9 5 5 2·2
1 5 3 5 0·9
30 55 15
35 48 17
35 25 40
41 51 8
34 56 10
48 47 5
25 66 9
43 20 37
none 50 50

high incomes, have not this tradition and will not sacrifice their comforts for the purpose of giving higher education to their children The division by incomes, therefore, will group together people having different attitudes towards university education. As we wish to investigate the extent of social mobility and the social origin of the future intellectual and professional workers, we have to accept the division by social status rather than by industry or income, with all the defects which such classification entails

We divided the students' parents into eight groups (1) employers of labour, directors and managers of firms and companies, people of independent means (rentiers), and large landowners, (2) independent members of the liberal professions and the higher grades of the Civil Service, the clergy, physicians, lawyers, teachers, officers of the armed forces, and similar groups, (3) civil and municipal service, non-commissioned officers, police, and similar groups; (4) lower clerical and office employees, (5) retail shopkeepers, independent artisans, one-man businesses, (6) independent and collective farmers, (7) agricultural workers, (8) workers in industry, trade, transport, distributive trades, and domestic service. Of all answers to our questionnaire only the American table used a classification similar to ours In other countries we had to arrive at comparable figures by reclassification of the data received Thus in the U S S R. the first group of " employers of labour " does not exist at all, and the second group of the liberal professions is incorporated in the Civil Service. In Czechoslovakia all independent shopkeepers and artisans are included in the first group. In the U S A the small group of Federal Civil Service is merged with the liberal professions, and so on Only in the last three groups is there no misunderstanding farmers, agricultural and industrial workers mean the same in all countries

For our purpose the main division into two groups of independent, professional and clerical workers on one side and the agricultural population and industrial workers on the other is of more significance. The first group has a tradition of secondary (and higher) education, the second group has not The table on Social Distribution was compiled from statistical data given for each country separately It gives an over-all picture of the distribution of the labour force and of university students in percentages The diagram on page 640 gives a comparison of the two main groups, discussed above, for both the labour force and the students. It clearly shows the absolute and relative predominance of the minority groups among the students In this respect all countries have the same tendency, in various degrees, of course. The diagram opposite shows at the top the relative strength of the number of students in various countries as well as of the two main groups within each. At the bottom we have the percentage distribution of students divided into three social groups.

The countries represented may be divided into three groups. The first group comprises England, U S A, and U S S.R. Here we notice high percentages of students drawn from the working-class population This feature is a result of several causes First, the classical tradition in these countries is either absent (Russia) or comparatively weak The universities in these countries accept students without any knowledge of Latin or Greek (Oxford and Cambridge excepted), and thus give the students of working-class origin more opportunity to enter their doors Secondly, the Governments of these countries have embarked on a policy of mass subsidies to poorer students and have freed the access to higher education from its previous dependence on the ability to pay the expenses involved. As Czechoslovakia has adopted the same policy during the last two years, we should expect that more recent figures will show a higher percentage of students from the working class The second group includes Austria, Czechoslovakia, and France These countries are in a transition period, when the results of the new policy have not yet reached the statistical tables The third group includes the Netherlands, Italy, and Switzerland, where the old tradition of classical secondary education is still strongly upheld as preparatory to university entrance The policy of subsidies has not been yet adopted on a large scale, and as a result the students of working-class origin are almost absent.

EDITORS.

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