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EDUCATIONAL APPLICATIONS OF SOCIOLOGY

BY
DAVID SNEDDEN

BEING A REVISION OF PARTS III AND IV OF THE WRITER'S EDUCATIONAL SOCIOLOGY



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TO THE READER

To a people that have come to attach as much importance to education as have Americans, the constant improvement of that education is a matter of paramount importance.

Parents, civic leaders, and practical men of affairs are far from satisfied with the education of our higher and lower schools as it is conducted today. Teachers and other educators are well aware that in classrooms from kindergarten to graduate and professional school, we are failing in many ways to make systematic education as effective as it apparently should be.

Only constitutional pessimists are wholly dissatisfied, however. America has done wonders in advancing public and private education to the standards now generally achieved. It would require much more delicate instruments of social measurement than we yet possess to prove that, in view of opportunities and controlling conditions, public education in the United States, from kindergarten to university, is less socially efficient than is transportation, defence, agriculture, or commodity distribution.

Nevertheless, a large proportion of well-informed Americans have not only keenly-felt aspirations and ideals for much better education than we have yet achieved; they possess likewise fairly well-defined goals for that superior education. Any observant man can readily perceive among those with whom he is in daily contact, numberless kinds of shortages—in literacy, reading interests, finer culture, civic righteousness, and many others —which, it is practically certain, could have been prevented by a more purposive, a more efficiently directed, or a more practically administered, education.

For these manifest shortcomings in our education, it has been long customary to blame chiefly the agencies that support our schools, or else teachers in their classroom work. But it now seems probable that much of the trouble lies deeper. In the parallel field of national defense, it can readily be understood that military campaigns sometimes fail because the public provides insufficient financial support for the armies. Sometimes, too, they fail because of the poor fighting qualities possessed generally by the soldiers. But all history seems to prove that these are usually the

minor causes of failure, at least in modern and highly organized warfare. The major causes are poor planning, unscientific strategy, insufficient comprehension of objectives.

Modern education suffers the same general affliction. Its major weaknesses grow out of wrong or incomplete understanding of desirable and practicable objectives. How often we find papers written by well-known men under some such title as "What is Education"! How endlessly educational bodies still debate such basic issues as: "What is the purpose of the high school?" and "What are the values of a college education?"

No less significant of a kind of basic bewilderment in regard to educational aims and accomplishments is the incessant discussion of questions as to the "values" in school education of such subjects as music, home economics, algebra, English grammar, Latin, chemistry, trade school work, physical sports, and the rest. Listening to such discussion the cynic could readily be forgiven for assuming that educators are in no substantial agreement yet as to what they wish to teach in their schools or why anything in particular should be taught. Such a cynic could certainly find justification in his own mind for wondering whether it is important that the schools should be supported at all!

There is every reason to believe that public support for any particular form of education will be much more easy to procure when the actual values of such education—to the individuals immediately affected, or to the societies in which they have cooperative membership—shall have become clearly defined in the minds of substantial proportions of laymen. Likewise it is highly probable that once such values are well-defined for teachers and school administrators it will be far easier than it is now to devise, procure and enforce more effective methods of teaching than those now usually practiced.

In a sociological sense substantially all the objectives now held for our schools—with the possible exception of a few professional and other kinds of vocational schools—are the products of prescientific methods of social evolution. This does not mean that all of these objectives are lacking in validity. Prescientific medicine had achieved many useful cures and preventives before scientific medicine superseded it. Prescientific education has unquestionably done the same. But the fundamental trouble with prescientific social processes is their ill adaptation to highly complex social conditions as these later evolve. Much of the old custom-based and tradition-transmitted education was doubtless fairly good for the simple conditions of life then prevailing—and at any rate it was the best that could be had. So with prescientific control of disease, dietetics, agri-

culture, bridge-building, navigation, defence, transportation, and care of defectives.

The present confusion and dissatisfaction with educational aims and achievements is not due to the fact that in any collective or extensive sense we have gone backward. Quite conceivably every single item of contemporary school procedure is more effective and economical than the corresponding item was one hundred years ago.

It is the extent and character of social demand that has changed fundamentally. Stage-coach methods, good as they once were for the needs of relatively simple ages, will not satisfy the twentieth century—neither in education nor in most other vital departments of life.

It is the purpose of this book to analyze a large variety of the customary or experimental aims now held in the several fields of school subject matter,—to evaluate them, and to suggest reconstructions, so far as present sociological knowledge renders practicable.

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PART I

THE SOCIOLOGICAL FOUNDATIONS OF EDUCATION

EDUCATIONAL APPLICATIONS OF SOCIOLOGY

CHAPTER I

SCHOOLS AS SOCIAL AGENCIES

INTERPRETATIONS OF EXPERIENCE

All readers of these pages have had much experience with schools. They have attended primary schools, high schools, normal schools, perhaps a state university. They have shared in teachers' institutes, which are simply "short course" professional schools; they have at least seen private "business colleges" and parochial schools; and they have heard of West Point, Annapolis, and the hundred medical schools or colleges of this country. They have read the advertisements of schools of dancing, schools of modern languages, correspondence schools, and special schools for defectives. They know that most states support schools for delinquents, for the blind, for orphans, and for redeemable criminals. They appreciate something of the scope of denominational colleges, boarding schools, summer schools, summer camps, militia camps, European travel parties, self-improvement clubs, Chautauquas, expositions, libraries, and museums, all of which are schools of special kinds.

Readers of the history of education know, too, that the past has seen many kinds of schools which are now obsolete or declining. Monasteries and nunneries were often essentially schools—a school being defined as any agency that makes some kind of education its *primary* business. The relations between older skilled worker and younger learner that long constituted apprenticeship were primarily for economic rather than educational ends, but these often resulted in the establishment of special classes or schools, as indeed they laid the foundations for the continuation school system of Germany. Armies have always had special classes, parade ground drills, officers' classes, mimic warfare, and the like, designed usually to administer primarily to some form of education. Anthropologists find that far back among primitive peoples ceremonies of initiation commonly signalized a sort of "commencement," terminating a period of systematic training or instruction.

Schools are, and always have been, social institutions. But they have often rendered their social services primarily to the lesser social groups—families, guilds, parties, churches, sumptuary classes, governing classes,

one sex, or the naturally gifted—rather than to larger societies like the State. Frequently, schools have been administered primarily to help the individual—especially the potentially strong individual—further to "help himself" as warrior, priest, guildsman, business man, aristocrat, seeker after salvation, wooer, duelist, or connoiseur. But only rarely have these valued ends been individualistically promoted, much less conceived, by the authorities of the schools. Superior soldiers, business men, priests, diplomats, and even dancers, stone-cutters, sea-captains, and interpreters were thought of as persons who, achieving success themselves through their schooling, would confer great benefits likewise upon their fellows. Not in kind but in degree only did the underlying ideals of "service" held by historic schools differ from those of our contemporaries who promote schools for the training of teachers and agricultural experts, and for leadership in research and culture.

Out of his rich experience with schools, the reader can readily answer in a measure many of these questions:

1. What were some of the noteworthy differences between the education you received in your home from age two to age four and that subsequently received in the primary grades? Could you fairly say that one kind was "more important" than the other? What conditions determined that the home should teach you speech and that the school should teach you spelling?

2. What are the most visible differences in the "social services" rendered by: state universities as against denominational colleges; private commercial schools (on a profit-making basis) and commercial departments in high schools; parochial as against public elementary schools; private, corporation-supported trade schools as against public trade schools? In what senses is it correct and in what invidious and incorrect, to speak of one type as more (or less) "democratic" than the other?

3. A certain college of medicine trains young men to be superior surgeons and physicians, callings which they thereafter steadily follow. Is this a "social service"? Under what conditions could or would such institutional service be non-social?

4. It appears that early American settlers in New England coöperated in creating elementary and "Latin Grammar" schools, the first to make all children literate, the latter to give higher forms of education to the "elect." Were such schools "social institutions"? Wherein were they less than fully "socialized" by current standards?

5. Throughout the Middle Ages the Catholic Church maintained very many schools in connection with churches, convents, and monasteries. The primary functions of these were to promote religion by education. Some were for novitiates to priesthoods. Some received only the children of "upper classes." In what senses were these institutions, perhaps, only partly "socialized" schools.

6. How would you define the larger and more significant "social aims" of kindergartens under the following conditions:

a. Where the pupils come almost wholly from dingy and "slummy" quarters of cities?

b. Where the pupils come chiefly from well-kept homes in clean and prosperous suburbs?

c. Where the pupils come from rich homes having many servants?

7. The city of M. consists of two fairly distinct parts. South of the railroad that cuts through the city is a "working class" population, living in small and largely unkempt houses, on dusty streets, and amidst considerable squalor. Three-fourths of the parents are foreign-born. North of the railroad tracks is a much more prosperous population, chiefly American born, with well-kept homes. Each section has its own school for children six to twelve years of age. What should be *distinctive* features of the curricula of the two schools, and what should be the *similar* features, granted complete freedom to make these curricula best in each case?

8. In a large manufacturing city it is proposed to open as a public school a special trade school of machine-shop practice, admitting only strong boys at least sixteen years of age. It is proposed that the school day shall operate from eight A. M. to five P. M. on week-days, except Saturdays, and from eight to twelve on Saturdays. Two-thirds of the school day is to be given to productive shop work, and one-third to the science, mathematics, and "social relations" studies needed by machinists. Do you see anything undemocratic or anti-social in such a school?

9. Did your earlier schools teach you "ideals"? What kinds? How intense? Did they thus reinforce the teaching of other agencies—parents, pastors, companions, books? Or did they teach some entirely new ideals?

Did your schools destroy some of your ideals? Were these good or bad? Did such destruction seriously maim you spiritually or otherwise?

10. Did your high school or college education give to you something that could be called a "philosophy of life"? Have you become possessed of such a philosophy from any source? Have you any clear notions as to what it means? Is absence of a "philosophy of life" a serious matter? To the very young? To the very old? To adolescents or to young men still unsettled in the world?

Who seem most to possess now a satisfactory "philosophy of life"? Devout Mohammedans? Prosperous farmers? Middle-aged scientists?

SCHOOLS AS SOCIAL INSTITUTIONS

Education, in one form or another, is, obviously, one of the secondary or incidental functions of substantially all social groups in which individuals are reared or into which they are adopted. Certain kinds and

degrees of that education—good or bad—are almost certainly the by-products of every new experience in life—taking a journey, obtaining a job, getting married, making a friend, meeting with an accident, or having a vacation.

The agencies of indirect or by-education include substantially all of those created by men for purposes of carrying on the collective life of social groups. Every shop is an educational agency in some degree for all its workers and especially for those who are younger and others least experienced in its ways. Every household, market, ship, church, playhouse, street, park, resort, hotel, club, and court gives to those coming under its influence new perceptions, ideas, appreciations, and ideals that are essentially educational. Every newspaper, book, billboard, pageant, public musical performance, lecture, and window display is in some degree a means of education.

But education, as a systematic and primary function of social groups, is effected largely through the agencies or institutions which we call schools—private schools or public, specialized or general, for infants or for adults.

All schools are, and always have been, social institutions in the sense that they have been created by social groups, have served social groups, and have commonly operated through social groups of their own creation.

Some schools are primarily created by, and are designed to serve, family groups. Others are the products of religious, craft or other guilds, and are primarily expected to reinforce the purposes of their parent institutions. Schools designed to serve political communities—town, state, nation—are of comparatively recent origin, but are now of first importance in all civilized states. These public schools include not only "common" and secondary schools, but also higher, technical, and other types of school supported and controlled by municipalities, states, nations, and even coöperating states.

Schools established to minister to the needs of small groups (such needs being given concrete form and expression, of course, by the older or otherwise more influential members) can, ordinarily, pursue very specific purposes, since these are set by clearly perceived need, tradition, or fashion. Private schools for the children of the wealthy, schools serving church denominations, commercial vocational schools, and the like, seem easily to define their objectives and to be able to pursue them tenaciously and directly.

The case is otherwise with state universities, public high schools, rural

elementary schools, and large urban elementary schools—especially the portions of the latter now being transformed into junior high schools. The service here to be rendered is to the largest social group yet capable of making organized demands—the state, as crystallized into municipality, province or nation. Valuable ends are various and conflicting, often incapable of exact definition or measurement. Hence the confusions into which policy-makers for such schools have fallen. Vocational objectives in a state university are likely to be more clearly apperceived and hence more sought after by students than cultural or civic objectives. Public high schools, because of the superior social status and adolescent ages of their students, have peculiar obligations to serve the needs of contemporary societies for higher and more vital forms of *general* or *non-vocational* education—towards health, culture, and civism. Yet policy-makers for them are likewise incessantly tempted to stray after the siren voices of a sham vocationalism.

SCHOOLS SOCIOLOGICALLY CONSIDERED

Schools, as social agencies taking the forms of institutions, may be described, interpreted and evaluated in terms of evolution, structure, function, value, or reconstruction. Only a summarization of some of these matters is practicable at this point:

1. *All human beings* are naturally learners. It is the nature of young human beings especially to learn avidly, incessantly, and widely from many sources in their environments. They are receptive and acquisitive, and they seek constantly for opportunities to exercise their performing powers. Nature has, further, insured that many of these "learning propensities" of children shall be growth-producing towards adult needs, anticipative of adult possibilities. It is always possible, too, for such learning to be of harmful or useless things as well as useful.

2. *All human beings,* and especially the young, can be forced to learn many things towards which their spontaneous interests do not readily or normally turn. Pressures of fear or want, as well as artificially produced appreciations of deferred satisfactions, can serve for effective, even if cruel, motivation.

3. *Education* can best be defined as the more or less purposive organization of natural or artificially cultivated learning powers towards the achievement of approved ends. Such organization of educative means can be done by an individual himself—giving the "self-education" frequently found in the most able-minded of adolescents and adults; it can be effected by the elders or more responsible members in the family, congregation, combat group, shop, sociability gang or group, or crew of laborers, this giving several varieties of

"by-product" education; or it may be achieved through systematic coöperations of prosperous families, the citizens of a local community, or the rulers of the state, thus giving private and public schools of many kinds.

4. *Every social group* organized primarily for such purposes as defense, production, worship, rearing of children, fellowship, promotion of party ends, and the like constantly carries on the education of its members, more particularly the young or least well-adjusted. But this is commonly "by-education" rather than school education.

5. *Agencies organized* for the instruction, attraction, control or pleasure of certain parts of the population may serve, in greater or less degree, as agencies of by-education for others. Newspapers, fiction, museums, libraries, merchandise displays, advertising, police surveillance, the stage, public sports, and many other institutions serve some persons primarily for non-educational purposes, and others for truly educational purposes.

6. *A school* is any agency or institution the primary and controlling purpose of which is the conduct of some form of education. Schools may, therefore, be public or private, for adults or for the young, devoted to serving several kinds, or only one particular kind, or educational need. Classes in dancing as well as universities, schools for the professions as well as for purely cultural education, schools for the blind or for day nursery children as well as trade schools, must always be included under our sociological concept of "schools" or that still more vague and unsatisfactory abstract term "the school."

7. *The services or values* of any particular form of education may accrue chiefly to the individual himself, to any one or a few of the "small groups" in which he has membership, or to any one of such "large groups" as a church (denomination), a social class, the state, or humanity at large.

Since there must inevitably be always some conflict of interests as between the individual and each of his groups, and also as between his various social groups themselves, as respects their claims upon his devotion and service, it is obvious that the principal purposes of schools may be used to contribute to the "valued ends" of various of the individuals or groups concerned.

We say that school education is "commercialized" when it is sought after as a means of furthering private economic interests. Such political groups as provinces and nations have almost always been suspicious of the education given exclusively under control of religious bodies. Not a few Americans now look with misgivings upon the proposed establishment of "workers' colleges" that shall teach "labor economics."

8. *Schools* have almost never consciously served *"the entire social group"* and only rarely groups of more than national magnitude. It is probable that in large part the school-established vocational, civic, or cultural qualities of western (temperate zone) peoples are largely antagonistic to the desires and interests of oriental and tropical peoples. It seems inevitable that intensive

patriotic education in one country shall, in some degree, seem anti-social in its effects upon the peoples of adjoining countries. It is claimed by "labor" the world over, that public and private schools, controlled by the "bourgeoisie," as it is contended that they are, do not give fair interpretation of the aims of "labor" or its various political and other organizations. Certainly the more militant or defensive religious sects have long been unwilling to trust the education of their children to competing religious denominations.

9. *Schools* commonly create social groups as a necessary condition of their administration as do, usually, the functions of worship, defense, fellowship, economic production and procreation. School social groups vary in size from a half-dozen individuals to several thousand. They differentiate into several distinctive types, as classes, the whole school population, alumni bodies, school "societies," school cliques, and the like.

The social psychology of the usual school group can only be explained by recognizing the very peculiar elements of homogeneity and of heterogeneity that are necessarily functional in such groups. First, the learning membership (pupils, students) tends to be homogeneous in many respects—as to age, abilities, social station, intellectual, and some other interests,—all making for certain characteristic forms of likemindedness in class or school population and later among graduates. But, in the second place, the control and development of school activities on behalf of parents, church organizations, potential employers, and especially the state is necessarily in some degree oligarchic. The ideals of present-day school administration from the kindergarten to the graduate or professional school seek to develop and extend qualities of democratic organization and to mitigate as far as safely can be done the oligarchism inhering in administrative boards, faculties, principals, and teachers. But the essentially oligarchic character of school group control (in the sociological sense) must always remain in some degree because of the inexperience of pupils and the very purposiveness of school education.

10. *School-created social groups* (including classes, student bodies, patrons, governing committees, agencies of social control, and the like) respond to most of the social processes found in other societies. They tend steadily towards institutionalization. Within them oligarchic and democratic influences are constantly in competition. Everywhere in America specialization of function evolves persistently in and over our schools.

What commanding officers are to armies, *entrepreneurs* in business, and statesmen in politics—that is what the present-day policy-makers in education are coming to be in modern school systems. Among these policy-makers we usually find: (*a*) laymen charged with special responsibilities, as governing boards in school and university systems, corresponding to congressional committees and cabinet secretaries for war, directors in corporations; (*b*) specialist and supposedly expert professional leaders, as principals, presidents, and school superintendents, corresponding to army officers, corporation super-

intendents and managers; (*c*) specially interested or specially qualified workers from the ranks of executants or from outside, coöpted to aid policy-makers.

THE MAKING OF AN EDUCATED AMERICAN PEOPLE

All Americans beyond infancy now have some education. Very few have as much as would be good for them and not many have had altogether the right kinds of education. Some have, indeed, been educated to be criminals, sensualists, or cynics. The education of many has caused them to think excessively of their own immediate well-being or that of their parties, churches, unions, or class—and too little of their families, the state, the fraternity of nations. The schooling of some in particular departments of knowledge seems to have been entirely wasted. Many worthy Americans have gotten much more from systematic self-education than from their schools—indeed some very well educated men like Lincoln have hardly ever been to school at all.

But America—meaning thereby, substantial proportions of influential Americans—has profound faith in the good effects of more and better school education. Hence the numberless endowments of schools, scholarships, and other similar agencies in the past—schools for the poor, homes for religious education, kindergartens, academies, colleges, trade schools, foundations for educational research. Hence the extension in geometrical ratios of public support and public control successively to many standardized types of schools. This faith is in part at the bottom of the fluid and sometimes apparently chaotic political administration of public and other "large group" schools.

Progressiveness has generally characterized the educational intentions and practices of Americans. The impulses that motivated migrations across the Atlantic and from Eastern to Western settlements are of the same cloth as numberless other impulses towards political freedom, religious secession, free thinking, exploration, city-ward movement, elevation of sumptuary standards, more extensive education, diffusion of practical scientific knowledge, and corporate organization for economic production.

The "Spirit of Progress" is a real socially emotive force in America, even in the absence at times of any assurance that resulting aspirations and practical movements are upward or forward. Peculiarly has that been true in education, and conspicuously in public education. In most of our states substantially all forward-looking men and women have always had profound faith in the virtues and rewards of more "educa-

tion," at least for their class or level. A writer is tempted always to write the term "education," as used by these persons, with quotation marks because of its general, inclusive, vague, and essentially emotion-kindling character. It is usually expressive of aspirational rather than realistic goals—like many other faiths, of course.

ASPIRATIONAL OBJECTIVES

American faiths in "education," like all other extensively socialized and persistent faiths, tend steadily to let belief, aspiration, and preconceptions play large, if not controlling, parts in educational policy making, as against tested knowledge. In the earlier stages of the evolution of such policies that has been inevitable. But how far the resulting larger objectives of the schools have been sociologically sound, it has never been possible to say. It is needless to review our past history in this respect. Scores of contentious issues are still the themes of discussion in educational books and magazines.

We have, for example, no acceptable collective understanding as to whether the classical languages are valuable means towards the general education of youths of superior mentality or not. We debate endlessly about the desirable interconnections of cultural and vocational education. One set of aspirationalists are very desirous of providing schools for very young children—even those between two and four years of age. Others think that a "high school" education would be good for all boys and girls. Our nation is webbed with organizations each devoted to the promotion of some particular kind of education—in thrift, music, manual arts, vocations, health, home life, scouting, or sports.

Subject-matter specialists of nearly all kinds—in Latin, chemistry, physics, astronomy, music, French, English language, industrial arts, graphic art, manual training, hygiene, physical training, home economics, bookkeeping, geography, English literature, American history, ancient history, modern history, algebra, geometry, botany, biology, thrift, current events, vocational guidance, and the rest—each feels that his favorite study should be "required" in high schools. Now the junior high school seems also a promising territory for additional preëmptions and mandates.

The classicists and mathematicians, supported by tradition and a mistaken psychology, were once able largely to predetermine secondary curricula. Now, with skepticism of tradition gaining ground and the faculty psychology undermined, they are losing and new "blanket prescriptionists" are coming into power.

Prescription is, of course, of two kinds. One is personal and concrete, taking account of individual characteristics and potentialities as studied and evaluated. The other is impersonal and abstract, oblivious to individual powers and needs. A competent physician "prescribes" after individual diagnosis. The standpat college "prescribes" Latin for all alike, quite indifferent to the unlike talents of potential entrants, or to the numerous ways in which these can capitalize their respective talents towards subsequent social service and personal well-being. It was similarly once possible for orphanages to prescribe castor-oil or calomel for all inmates simultaneously when service for individual diagnosis was lacking; whilst the less wise among us even yet permit pseudo-physicians and other similar healers to prescribe cure-alls with no regard to distinctive needs.

So now, to save educators the trouble of making desirable adaptations, we "require" certain kinds of calisthenic exercises of all children in New York State, including those already of excellent physique and health. We require all high school students to take our formal English literature, notwithstanding that in any suburb will be found from five to fifteen per cent. of sixteen year old girls who already have more literary "culture" than their teachers, and who give positive promise of adequately extending and expanding their linguistic powers and literary interests if the school will only leave them free to continue their home-initiated culture as is so commonly done in the better homes of England. Some high schools require all girls to take home economics, granting no exemption to that minority of girls who are already better practical homemakers than their teachers, and who, left alone, will presently acquire needed technical knowledge via self-education.

It is sound public policy for legislatures, or school systems, or competent and authorized teachers, to prescribe studies or other educative means—from corrective gymnastics or gardening to Greek or economics—to those who demonstrably need these forms of training for their own good, or to those who are so situated that through such studies they can probably render valuable and relatively important returns to society. But why prescribe them indiscriminately in advance of any knowledge of such need or obligation as found in individuals?

In these days, when we are learning so much about the variabilities of learners, and when the "social inheritance" of things we can readily teach, even to a young child, is so expanding and proliferating that at best we can bring him into effective contact with only a fraction of them, the

"general prescriptionists" in education should be made to carry a heavy burden of proof. Algebra and trigonometry are very valuable departments of knowledge; but it does not follow that one hundred per cent. of our young people need study them in order that their full benefits may be realized by our societies. The social sciences, literature, music, European history, and even current events are certainly highly valuable subjects of study—for some; but, in the absence of any evidence of their usefulness for all, why require all pupils to take them? They will certainly not be needed by all individuals in order to live well; and their adequate possession by some reasonable per cent. of learners will undoubtedly serve all ordinary social purposes. The typical academic mind is scandalized to find a trade school for boys from sixteen to nineteen years of age without "cultural" studies. Why is it assumed that interest and receptive powers for these have not been exhausted between six and sixteen; or, that individual or social needs beyond those already met still remain to be served?

All the studies or other activities that have been offered or proposed during the last twenty-five years for inclusion in the non-vocational curricula of schools for youth from twelve to eighteen years of age are clearly rich in possible educational values—for some. Certainly baseball and dancing, current events and social problems, Italian and bacteriology are useful and attractive studies—for some persons. But it is no less certain that the foreign language, or classical English literature, the manual training or gymnastics, the general science of algebra required of all (in some or most schools) have been utterly profitless to some either for culture or for any other purpose.

The social sciences are now coming to the front. Naturally their devotees feel them to be exceedingly important studies for secondary schools—as they unquestionably are. But why important for all pupils? Why more important for some pupils than thorough courses in music or Spanish, in chemistry or trigonometry, in scouting or vocational guidance, in public speaking or American literature, or even in current events? Neither time nor energy is available to the individual pupil for all or even a tenth of the good things that may economically be offered in the modern large urban high school or junior high school. For our future civic well-being it is highly important that some persons study the social sciences deeply, just as for our cultural future it is indispensable that a musically talented minority should become proficient amateur and professional performers of music.

In the upper grades, and to a considerable extent in some high schools and liberal arts colleges, we have tried to compromise with the difficulties of a rich and varied menu of studies by taking "a little of everything." The most visible effects of this policy are seen in the appalling aimlessness and superficiality of our instruction and training in modern languages, natural science, English literature, and other subjects, including those pedagogic monstrosities, the so-called "prevocational studies."

Where election by pupils has measurably superseded prescription by the "system," the youngsters, naturally, have not shown more intelligence than their elders in making programs. They, too, think a little is "good enough"—whether it be Spanish or public speaking, agriculture or drawing. Why should they be expected to show more wisdom than their teachers?

It will be urged that we have no adequate means of ascertaining the actual potentialities and needs of individuals, either towards prescription or recommendation. Have we ever seriously tried? Certainly the confused and hurried consultations on the opening days of school are not worth much. But how much less adequate is prescription by "system" in advance of any contact with individuals?

There are now over 2,000,000 boys and girls in attendance on America's public high schools—the superior grades of ability and of home environment being chiefly represented. Yesterday we required them all to take algebra; today they must all take our formal English studies; tomorrow they will all be required to take civics, or other half-developed social studies.

It is, of course, deeply comforting to be able confidently to say of one's favorite subject "it is so important that all pupils (in given schools) should have it." These naïve confidences held by all specialists are of the same cloth obviously as those other confidences that we possess as to the superiorities of our religions, our politics, our race, our place of residence.

SCIENTIFIC EDUCATION

A science of education—that is now the constant aspiration of progressive educators. For many years we have had sciences of navigation and of medicine. We say that modern agriculture is becoming a science. We recognize that the building of bridges and school structures, the excavating of mines, and the installation of hydro-electric plants proceed more and more in accordance with scientific principles. These all repre-

sent fields of human knowledge and work no less than do government, art, and education. But are the latter fields inherently incapable of scientific organization? Psychology, it is clear, is, in some directions at least, becoming scientific. By methods of analysis and measurement more or less objective, it is gaining much light on the actual "educabilities" of different types of persons. It promises soon to give teachers control of more purposive and economical methods of training, instructing, and guiding natural developments, than have accrued from trial-and-error and intuitive processes.

SCIENTIFIC OBJECTIVES

But of scientific objectives for our various schools—universities, high schools, kindergartens, reform schools, Americanization classes, evening schools, rural elementary schools—we possess, as yet, only a few. Most of us accept without question the importance of training all persons in the "silent reading" of ordinary printed matter, in handwriting, and in the ready use of the simplest operations of arithmetical processes. We readily perceive that generally diffused knowledge of some facts and a few interpretations of history, of certain outstanding essentials of geography, and of recently achieved discoveries of sources of, and remedies for, ill-health, are well worth while. We agree in wishing that all shall come to know and to love a few of our literary best things, some inspiring songs, and some vision-giving revelations from science.

Beyond this we are still largely in the dark—which means that our school curricula are made empirically, that we trust largely to private initiative to bring us leaders in all fields, and that a large part of our best meant educational work fails.

We do not know whether the kindergarten or any type of school resembling it is needed on behalf of the children of our more substantial families. We do not know whether French as now studied in our secondary schools and liberal arts colleges yields any substantial returns to our people in culture or towards fuller international understanding. We spend millions of dollars annually in promoting the study of music in public schools with only the vaguest and probably most sentimentalized notions of the values we are really after. Our colleges offer almost numberless highly specialized courses in world history without any program of ends to be achieved, except, possibly, the making of more teachers of history. Thousands of high schools offer courses in home economics—all built upon fine enthusiasms, but oriented and delimited by only very frag-

mentary documented studies of the kinds of homes, present and potential, practicable in America. For a century we made algebra a generally required subject in all secondary schools—as we still do for admission to college—apparently justified by a psychology since proven to be unsound; and even yet, the inertia of custom keeps that preëngineering study in high repute as a factor in liberal education!

It has always been most natural that, having been driven, or having fallen, into particular courses of action, we should evolve a body of doctrines and dogmas to justify them. We have always asserted loudly that the study of history in elementary and secondary schools would make for better citizenship. Here the wish has been father to the thought, as it was so long in the beliefs that the study of grammar would make for better use of English. Latin was once no less indispensable to the well-schooled man than is handwriting now; but when that day passed, scores of reasons were successively invented to justify the perpetuation of the study of Latin grammar, translation of the Roman classics, and the writing of silly sentences in Latin. For generations we have asserted that a "college education pays"—and have advanced as proof of the statement the unquestionable superiority in later life of the money-earning and distinction-winning powers of college graduates in comparison with those who would not or could not (the latter the large majority, certainly) reach that goal. Even within the last three years the United States Bureau of Education solemnly publishes a bulletin, fortified by statistics and diagrams, to prove that a "high school education pays"—using for that purpose evidence of the earning powers of technical high school graduates at age twenty-five in comparison with those of non-entrants of the same age who commenced wage-earning at fourteen years of age. Throughout the study no adequate recognition is taken of the drastic forces of selection which, at entrance to, progress through, and graduation from, technical high schools, operate to sift only the naturally and environmentally superior!

It is so easy—and, to the public, so convincing—to reason *post hoc ergo propter hoc* in these matters. As late as 1923 a well-known magazine published statistical and other facts to prove that farmers who take prolonged general education in high school or college will profit greatly from that action. In support of that contention data are published—avowedly based upon studies made under the auspices of the University of Wisconsin—to show that, among hundreds of farmers, those with a college education are making considerably more money than those with only high school educa-

tion or less; and that those with only high school education are making substantially more than those who did not get beyond the elementary school. It is even shown that the first class has many more bathtubs relatively to numbers, than the second class, and the second than the third! Truly, figures may not lie, but some queer reasoners will figure!

The inadequacy of our aims in education is made especially plain when we study our programs for those considerable proportions of children, youths, or young men and women who are markedly above or below the average in intelligence or in some other kinds of ability. Parents and teachers frequently take pleasure in encouraging and assisting gifted children to proceed rapidly through school grades and into higher schools —but to what worth while ends "in the long run"? At present we do not know.

Again, suppose the financial and other means were available to keep in full-time schools young people from 14 to 18 years of age of less than average intelligence. What studies or curricula could we or should we provide for them? What courses should we require, what leave to free election? Here, also, our theories and doctrines of educational values are still helpless.

PROGRESS BY DISCUSSION

Though there are many things that are wrong with our schools today there are also many things that are right. Our systems of education, like our systems of government, our systems of medicine, and our systems of economic production, are in a state of rapid evolution. In some respects, and in spite of much good will and strenuous effort, that evolution has gone wrong. It can be shown that education, like agriculture or national defence, is, in some of its phases, not so much wrong as simply retarded. In some other phases, however, it suffers, as do sometimes politics based on political science, from excess of so-called progressiveness.

The most prolific source of "wrong ideas" regarding education today are the persistent efforts of friends and foes alike to find and to use catchwords, inclusive formulæ, and undefined generalizations as means of doing battle for their hobbies or against their pet antipathies. In a democracy where all men are assured equal opportunities to think, speak, and write upon the numberless questions that lie in the broad twilight zones between generally accepted knowledge and the regions where the darkness of total ignorance bars the way to all but irresponsible speculation, public institutions must constantly pay the penalties of having their purposes,

their methods, and even their accomplishments often only half understood, and sometimes wholly misunderstood. But it is thus that progress comes —no less in politics, social economy, and even theology, than in education. "Whom the Lord loveth he chasteneth" runs the old adage. What democracy loves it ceaselessly keeps stirred to vigorous life, here by the whip of stinging criticism, there by the blandishments of too lavish commendation.

It would be folly to expect correction of these clumsy methods of popular discussion through the use of new methods at the present time. The sciences that are basic to the purposive education which we shall eventually have—the psychology, sociology, perhaps even biology that must be the foundations of that education, even as physiology, chemistry, and bacteriology are now the foundations of scientific medicine—these sciences are themselves as yet so imperfectly developed that they serve more effectively towards suggesting and stimulating further effort than in actually guiding the work of educators.

But much can yet be done by refining upon old methods, and especially by refusing to yield to the seductions of easy generalizations, doctrinaire formulæ, and obedience-compelling dogmas of all-inclusive character. Clear thinking presupposes, within limits, analytical thinking. Sweeping conclusions may be partly justified by analytical study of the processes by which they have been reached, or else their illusive character can be exposed. Even that very general and very complex question "what is wrong with education" is capable of being analyzed into simple elements, some of which will even now readily permit of profitable study and critical valuation. And it will materially help our inquiries if we confine them successively to certain age-levels through which young people pass from the infant stages of the primary school to the maturities found in liberal arts and professional college.

SOCIAL PROGRESS THROUGH EDUCATION

Schools of many kinds may be expected to play constantly enlarging and more significant parts in social progress. They will certainly increase in variety. Supplementing *general* schools of relatively inclusive aims, we shall have multiplication of special schools for the hundreds of vocations for which an undemocratic educational administration at present provides no specific facilities for training. We shall have more varieties of schools for defective and otherwise strongly variant groups. Probably, also, we shall see constant subdivision and increase, for adolescents and adults, of special classes and schools for specific kinds of physical, cultural, and

social education—in sports, health, music, letters, dancing, civic betterment, religious promotion.

It may be that from schools or their professional staffs will not proceed much of the new knowledge and spirit that will make for social progress—but these agencies will increasingly be expected to assemble, sift, and transform into suitable condition for use in instruction and training the aspirations, ideals, science, and wholesome faiths elsewhere originated. As the sciences of medicine, dietetics, and municipal government produce new knowledge, the appropriate general and special schools will accumulate and organize it for educational purposes. As fast as statesmen and their adherents reach findings of fact or policy upon which majorities of men of good intent can agree, the proper schools will make these likewise a part of the approved content of a vital dynamic education.

Schools are essentially transmitting agencies, making available for each new generation the best of the social inheritance up-to-date. It is sometimes contended by superficial thinkers that "the school" should "lead" in social progress, whatever that may mean. Certainly they should "lead" if that means assuring to the rising generation the best motives and powers that available knowledge and faith make practicable. They should lead, too, in systematically searching after better methods of organizing and conducting education. Research, too, can be conducted as a secondary function in some of the highest schools.

But it is not for the schools that serve the multitudes to strive to *originate* the knowledge they shall transmit of hygiene or statescraft, of applied art or religious principles, of evolution or physical training. Such would be a hopeless confusion of function. Dynamic societies, more and more under the sway of *telic* evolution (the consciously purposive evolution conceived by L. F. Ward), must utilize division of labor or specialization of function to a constantly increasing extent as means to its ends. Schools and the several varieties of education for which they should be responsible serve the ends of the more inclusive societies, but they do not, and probably should not, predetermine these ends. That is even a broader and deeper function than education itself.

FOR SUPPLEMENTAL READINGS AND REPORTS

BROWN, S. W. *The Secularization of American Education.*

BUTLER, N. M. *The Meaning of Education* (Ch. 3, Is There a New Education; and Ch. 4, Democracy and Education).

CUBBERLEY, E. P. *Changing Conceptions of Education.*

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GILLEN, J. L. *Poverty and Dependency* (Ch. 33, Socialized Education).

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KING, I. *Social Aspects of Education.*

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MONROE, P. *Principles of Secondary Education* (Ch. 1, Meaning and Scope of Secondary Education; and Ch. 21, Reorganization of Secondary Education).

MOORE, E. C. *What Is Education?*

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REISNER, E. H. *Nationalism and Education* (Ch. 18, The Development of a National Consciousness in Education).

ROSS, E. A. *Principles of Sociology* (Ch. 51, Institutions—the Public School).

SCOTT, COLIN. *Social Education* (Ch. 1, The Social Relationships of the School; and Ch. 3 and 4, The School as an Organism—Monarchy, Republic; and Ch. 6, Self-organized Group Work).

TODD, A. J. *Theories of Social Progress* (Ch. 33, Some Educational Implications of Social Progress).

CHAPTER II

EDUCATION AS A MEANS OF SOCIAL EFFICIENCY

INTERPRETATIONS OF EXPERIENCE

EVERY well informed person possesses a substantial number of fairly definite conceptions of what constitutes a socially efficient family, village, city, political party, church, corporation, or social set. We readily recognize certain social accidents or diseases, like famine, war, divorce, defalcation, falsehood, idleness, and vice, which impair or disrupt small or large social groups, hurt some or all of the individual members of them, and make for general unhappiness. All persons of good will now aspire after certain well recognized means of social well-being, such as industriousness, education, good weather, peace, community orderliness, right religiousness, friendly coöperation, and the like. Obviously, all that which we call education is one of the means of this social efficiency. It is a kind of basic means, since, rightly administered, it ought to prepare individuals to contribute to social efficiency along many or all other lines.

1. What are some of the factors that enable a family of father, mother, and four children from five to twelve years of age to realize the maximum of well-being? Separately consider: the moral fidelity of parents to each other; the health of the mother; the industriousness and thrift of the father; the peacefulness and order of their neighborhood; the ambitions of parents for the future well-being of their children. As respects which of the foregoing qualities are uneducated or illiterate parents less likely to be good parents than those who have an elementary school education? What are some of the recently developed purposes in school education designed to promote "family group efficiency"?

2. Recall the conditions surrounding and affecting the general well-being of the peoples of a small nation—for example, Portugal or Holland. Separately consider the relative importance of these factors in their well-being: the natural resources—soil, mines, harbors, water power; the order-producing government; general literacy; prevalence of vocational or technical knowledge and skill; the kinds and degrees of the religiousness of the peoples; a variety of domestic customs. To which of these factors of social efficiency does their education now greatly contribute? To which others could a better system of education probably contribute in important measure?

3. It is alleged that a great deal of valuable time, coöperative spirit, and good workmanship are now lost through lockouts and strikes in American

mines, factories, and transport systems—in other words, that the social efficiency of the whole people is greatly reduced because of these conflicts. Does it seem to you that more or better education could reduce this waste? At what ages could such education probably best be given? In what schools? By means of what kinds of courses? By what methods?

4. Do the conditions of our general social well-being seem to you to require that in the school education of our youth between the ages of nine and fourteen we should expend much more effort, science, and wealth than has heretofore been given, on better education of (1) all, or (2) certain (specified) case-groups toward the objectives of: oral reading; performance abilities in compound interest, true discount, and cube root; performance abilities in freehand drawing; reading of Spanish; piano playing; sustained oral composition or "speaking" before audiences; nature study; sex hygiene; vocal music (boys); vocal music (girls); handwriting; constructive work with clay; geographic readings; reading of newspapers; appreciation of photodrama? Indicate probable contributions to social efficiency of these increased efforts.

5. Does the well-being of American society seem to you to require:

a. That all adults shall be literate? How can the need best be met: (1) in the case of children born and being reared in our cities? (2) In the case of children born and being reared in very sparsely settled rural districts? (3) In the case of illiterate immigrants reaching our shores between sixteen and twenty-five years of age? (4) In the case of illiterate women immigrants reaching here after forty years of age? (5) In the case of natives of Tennessee who have not learned to read by forty years of age?

b. That: (1) all, or (2) all men, or (3) ten per cent. of ablest men, or (4) two per cent. of men and women, selected with reference to possible future vocations, should be encouraged and aided to become proficient in general algebra and trigonometry?

c. That: (1) all, or (2) all who can take a secondary education, or (3) ten per cent. of probable high-school graduates, or (4) ten per cent. of persons who can probably go through college, should be encouraged and aided to become genuinely proficient in speaking and writing French?

d. That: (1) all young persons, (2) all boys, (3) all boys who can probably take a college education, (4) ten per cent. of all boys who probably can not graduate from high school, should be encouraged and aided to obtain at public expense systematic training to journeymanship standards in the house carpenters' trade?

e. That: (1) all persons between twelve and sixteen years of age, (2) the exceptionally able-minded only, or (3) prospective leaders, should be required and aided to study those economic problems which, still largely unsettled and subject to much controversy, nevertheless underlie the political issues dividing parties in most state and national elections?

6. Having in mind the larger and more enduring social well-being of Ameri-

can society, endeavor to formulate the scope and character of the social needs that should be met through the combined effort of *all* our educational agencies as respects producing in many, or some, people: proficient reading abilities in ancient Greek; same, modern German; moderately proficient speaking and writing, and very proficient reading powers in commercial Spanish; encouragement and training toward research powers in astronomy; increased public support of training for military leadership.

7. Formulate some principles that should guide educators in establishing ideals and imparting knowledge as to the *relative values* in contemporary life of health, wealth, progeny, and beauty. What should we impart as principles as to the circumstances, if any, under which a man or woman should sacrifice: his own security for that of his group; his own health for the sake of wealth for (*a*) himself, or (*b*) those dependent upon him; his own wealth for the sake of knowledge, (*a*) for his own satisfaction, or (*b*) for increase of the world's knowledge; wealth, health, and progeny for the sake of (*a*) his own religious salvation, or (*b*) for the expected salvation of others?

EDUCATION ONE PROCESS TOWARD SOCIAL EFFICIENCY[1]

The processes through which social efficiency is attained are, as has been seen, many and varied. It has been shown that some of these are common to other species besides man, whilst some others are virtually human creations. Among the latter is education. Properly defined, this involves so much of prevision of ends or purposes, and so much of accumulation of ancestral experience, as to make it largely an impossible thing for non-human species.

Education is a more or less conscious process in all human social groups. It is a large factor in the social control which every group exerts over its younger and more plastic members. The family is, obviously, the most important educational agency, notwithstanding that in it most forms of education—in speech, manners, extension of experience with environment, acquisition of lore—are by-products of its other purposeful activities. Playground and street associations are also profoundly educative, even though purposes and methods here are usually so largely embedded in custom as to be only vaguely apprehended by the more dominating, and therefore the more "educating," members.

Childhood is, obviously, a time of preparation for adult activities. The

[1] Books on this general theme are numerous and varied, though seldom based on a formulated social economy. The reader is advised to reread chapters from Spencer, *Education;* Smith, *Educational Sociology;* and G. S. Hall, *Youth.* He should also consult the tables of contents of Dewey, *Democracy and Education;* King, *Social Aspects of Education;* and Snedden, *Vocational Education.*

work of the world—its industry, defense, worship, government, research—must be carried on by adult men and women. But the qualities, appreciations, powers, and ideals that they bring to the performance of this work are in part due to the growth and learning which have been theirs during childhood. Hence education as a process toward social efficiency occupies a peculiar place—it is, in a sense, basic and conditioning, being in these respects like the geographic environment, the natural resources available, the biological inheritance, and the previously accumulated social inheritance, which necessarily condition all derived processes of production, exchange, government, worship, family organization, and the rest.

DEFINITIONS OF EDUCATION

Education is variously defined—and many of these definitions tend to be too metaphysical to be of practical service. For sociological purposes, adequate definitions can best be derived inductively. It is, for example, evident that the school is only one source of education. Education is effected through the home, the church, and the shop. It takes place, in one form or another, on playground, through attendance on theater and photodrama, and by means of newspapers and magazines. It can hardly be said that the education of any individual ceases, so long as he submits himself to new experiences and makes new acquaintances. Men are only in part educated by agencies external to themselves. Self-education is carried on, more or less purposively, by numberless youths and adults.

Back of, and basic to, education is natural growth and natural learning. All young creatures—plant and animal—*grow.* All sentient creatures—the animals—not only *grow,* but they also *learn;* that is, the interaction between their instinctive natures and their environments produce habits, attitudes, associations, skills, and the other products which we readily recognize in any mature bird or mammal, and which probably are to be found in modified forms in fish, insects, and other members of the animal world. Learning—through experience, exercise of curiosity, and trial and error in pursuit of desired ends—is, therefore, a natural process. From the day of his entry upon life, the child proceeds to "learn his way about" no less than do puppies, chicks, and all untamed creatures.

Any normal child, obviously, grows toward manhood if properly nurtured—just as do plants or animals under corresponding conditions. But what is proper nurture? Suitable food, shelter, rest, sleep, and protection from dangers are easily understood factors. But the human organism is so constituted that it needs many things besides these. Physical play,

companionship, satisfaction of numberless instincts of curiosity, communication, competition, imagination, love of beauty, and the like, all seem necessary to the making of the full-grown man out of the child.

Observant adults are always fascinated by the extreme activity of the learning processes of a normal young child. Hands, feet, eyes, mouth and tongue, ears, and voice are incessantly active. We say that his curiosity is insatiable. He is inquisitive, acquisitive, imitative. As powers increase he craves manipulative, tactual, and gustatory experiences. He wants to see and hear much, and to roam afield. He learns as naturally and insistently as he grows—in fact, much of his learning could be described as growth in numberless forms of experience and power. It is his nature to learn, as it is the nature of water to flow downhill, or the nature of plants to grow when sunshine, soil, and moisture give favoring conditions.

But adults, or others having authority, can in many ways direct, arrest and intensify both the growth and the learning processes. They can do this with full consciousness of what they desire; or they can do it in accordance with more or less blind customs which they accept and approve. And after his earliest years the individual can to a certain extent direct, control, and intensify his own growth and learning processes.

How, and under what conditions, do child and adult grow best—best, that is, toward the kinds of manhood or womanhood that at any given time are conceived by leading minds as most worth while for self and society? How and under what conditions do child and adult learn best—learn to possess those things in appreciation, habit, understanding, and ideal which, again, seem at any given time, to those best qualified to know, to be best for self as well as for others making up the social groups in which the individual has membership and interdependence? Full answers to these questions will probably most adequately serve our needs of definitions of education. Any purposive control of these growth processes —and especially of the learning processes under them—belongs properly as part of education.

Working definitions of education can, for practical sociological purposes, best be based upon these considerations. Education is not so inclusive as growth or learning; but it ought to include all purposefully controlled growth or learning—and especially all that which is so controlled toward foreseen ends.

Training and instruction imply highly purposive control and stimulation of specific learning processes. Children naturally learn a great variety of manipulative processes; but they must be *trained in* handwriting. They

naturally acquire much experience with their environment; but they must be *instructed* as to the chemical composition of water.

Education is analogous to the purposive control of flowing water for irrigation or power. It can not create powers or faculties; but it can direct, store, suppress, or specialize existing powers. Education can, therefore, be directed toward hurtful or beneficent ends. Suppressions of the growth of a Chinese girl's foot or of a Christian woman's amatory instincts or of a youth's scientific curiosity are all forms of education in this broad sense. The child so situated that he can learn only the language of his parents has already had his learning powers "canalized" toward certain serviceable ends by his social environments.

The purposiveness of education, in any of its numberless processes, presents real difficulties of sociological analysis, since there may be many procedures that are socially purposive, even when the individual is not aware of the actual purpose. We sometimes say that instinctive action on the part of individuals is purposive, even though the individual is not aware of the purposes served. In somewhat similar ways, societies often possess customs and institutional procedures which, due to long selection and survival of the best, have become very purposive, even though no individual may now be able to give explicit formulation to such actual purpose. Social science seeks, of course, to translate blind or unconscious purpose into enlightened and conscious purpose, as far as practicable.

A large part of all education, therefore, is administered, as it were, by persons who are only very slightly conscious of what they are doing—they are simply obeying customs that have become well established through a succession of generations. The child growing up in a Chinese family acquires a host of manners, words, tastes, beliefs, and ideals that are very different from those acquired by a child in an English family. But the results approved by each family are those that have over a series of generations been found good—and their transmission from old to young has become socially purposive, even though individual teachers are only vaguely aware of what they are doing, or why.

Education, then, includes all controls of growth and learning processes toward ends approved by persons having power and authority to exercise such control. We can conveniently differentiate kinds of education according to the agencies controlling it—as home, church, school, shop, playground, press, stage, police power, and library education. Or we can classify its numerous objectives—as linguistic, military, health, vocational, civic, cultural, or religious. We can profitably distinguish the direct educa-

tion given by a school or other agency having education as its primary purpose, from by-education (or by-product education) given by an agency that has other primary purposes than education—shop, church, home, club, and the like.

In the sense here taken, then, education is a process almost wholly peculiar to human beings. Quite possibly very elemental parallels can be discovered in the means by which young chicks learn from their mothers not to be afraid of the house cat, or by which young bears learn to be desperately afraid of human odors. The obvious fact is that man's ability to accumulate and transmit a "social inheritance" of knowledge, skills, customs, likings, and beliefs constitutes the foundations of education; and that certain physiological qualities which evolutionary processes have given rise to—enlarged brain, vocal organs, prolonged infancy, among others—make possible for man kinds and degrees of education impossible for animals, even under man's tutelage.

We possess, of course, little accurate knowledge of education among prehistoric men. But useful inferences can be drawn from observations of social groups still reproducing primitive conditions—of which families in our midst, as well as those of still savage groups, provide numerous examples. The mother has always been the chief educator of the very young. The mother's brothers, or, under established patronymic family conditions, the father, added certain forms of masculine control. Nearly everywhere in primitive life some sort of initiation signalizes the acceptance of the adolescent boy into companies carrying on men's work. Probably there generally developed in the small "hordes" or clans of paleolithic times, besides fighting and hunting chiefs, leaders who were deemed wise in magic and lore, and by whom much of the more obscure parts of the social inheritance were transmitted. Until writing was developed into printing, oral communication was doubtless the chief means of transmitting knowledge, and the arts had to be learned through imitation.

SOME LIMITATIONS OF EDUCATION

A perfect system of education at the service of societies in any particular stage of their evolution can be conceived as that which would assure to each new individual the maximum of those forms of growth and learning which would enable him in optimum measure to realize all possible "goods" or values for himself and for his social groups. Education certainly can not be expected to create new powers, invent new appliances, or

discover new knowledge. But, ideally, it should equip each new member of society with all the powers and knowledge then known, and which can serve his ends, immediate and remote, individual and social.

The first limitation to education as a means of social efficiency is found in the social inheritance itself. Instruction in hygiene in the eighteenth century could not have helped people much in the prevention of the scourge of malaria, since the science of medicine did not then know how to prevent malaria. Education in Europe of the thirteenth century could not have transmitted knowledge of the construction of dynamos, nor of typewriting, nor of Protestantism, nor of the ideals of modern democracy, for obvious reasons. The best education of to-day can only transmit those means of social efficiency which have thus far been discovered and "stored" in transmissible form—and this applies, certainly, no less to political ideals, esthetic appreciations, and religious sentiments than to technical knowledge and mechanical process.

The second limitation appears to be found in the educabilities of human beings themselves. We readily acknowledge that men come into the world severely limited as to potential body size and strength. Apparently we must acknowledge similar limitations to mental able-mindedness, and perhaps to moral possibilities. All that is now known of mathematics, astronomy, or biology is probably beyond the "learning powers" of any but rare and gifted persons. The highest known forms of the arts of painting, writing, singing, and dancing can be reproduced or relearned by but a few.

But social groups are composed largely of individuals who do not greatly vary from the average as respects abilities of any specific kind that we choose to designate. Some men can readily learn several languages, but most men find it enough of labor to learn to use one fairly well. The "rank and file" of men, at least under methods of education now known, seem able to learn profitably only limited amounts of scientific knowledge, technical skill, or social ideals.

In part, these limitations are doubtless due to our imperfect methods of education—which constitute, therefore, the third limitation on education as a means of social efficiency. It is to be expected that methods of education will continue to improve, as will methods of governing nations, forecasting weather, or transport. The school as a specialized agency of education seems to have evolved only in recent centuries. Now its varieties are legion, and in all there is being prosecuted a steady search for improved methods. New schools are created as soon as new needs sufficiently momentous and well defined to justify such action are revealed. Some-

times, too, it is discovered that improved processes can be applied to the by-education of home, shop, church, photodrama, or police powers.

A fourth limitation is found in the mechanics of organizing and transmitting the social inheritance which education must use. The teaching of mathematics to children using only the Roman notation was certainly a laborious and time-consuming process. The unphonetic spelling of English and French multiplies the difficulties of children learning to write those languages. The Chinese now hope so to reform their system of writing as to reduce to manageable proportions the heretofore stupendous and cruel task of learning to read and write their literary language, which requires three years more than with us. The handwriting of English is still a task for all learners, perhaps yet to be simplified by some form of typewriter adapted to schools.

A fifth limitation is found in the restricted "functional values" of certain kinds of products of education. The multiplication of books since the invention of printing has simplified those kinds of transmission of information or knowledge which we conveniently call "academic instruction." But the possession of such knowledge by an individual may or may not result in approved action or behavior. Knowledge is an essential means to intelligent action, but is in itself no guaranty of such action. Hence modern education seeks increasingly to discover means and methods of producing motives, dispositions, and sustained powers for right action, thus entailing extensive changes in historically developed methods of "academic pedagogy."

Here are encountered certain problems, later to be analyzed, of differentiating between relatively "natural" and relatively "artificial" forms of learning. Judging by experience, it seems relatively "natural" for a six-year-old boy to learn to throw a stone, climb a tree, or imitate profanity. It is relatively "artificial" for him to learn to write with a pen, multiply, or do routine physical work. Probably in all young people desires for "natural" learning always compete strongly with externally imposed obligations for artificial learning. Dispositions, even abilities, to respond to these obligations have their limits.

THE INCIDENCE OF EDUCATION IN SOCIAL EFFICIENCY

The factors in social efficiency, as previously shown, are practically numberless. The possible contributions of education to social efficiency are likewise beyond ordinary computation. It is easy to describe hundreds, if not thousands, of currently approved specific purposes of education for

some or all individuals—to describe them *qualitatively,* that is. It is administratively impracticable, as yet, to determine satisfactory quantitative measures or degrees of such specific forms of education—except in a few rare instances like those determining the "content" of spelling or handwriting. This is partly because of our inabilities to establish relative values for the various social "goods." We can not say how much "knowledge for its own sake" schools should seek to "bestow" on specified classes of learners, because sociology gives us, as yet, no means of ascertaining the relative worth of such knowledge in comparison with religiousness, economic success, fellowship, and the other social values which can be realized only through time and effort.

Certain distinctions of educational purpose can, however, even now conveniently be made. There are, in the first place, certain forms of education that are primarily designed to specialize and increase those desires for good, on the assumption that, for other reasons, the exercise of these powers will be along lines consistent with the larger and more enduring forms of social efficiency. Every man naturally learns some arts of self-defense; education can teach him the use of more effective weapons or processes than he would otherwise master. Every man must work to live; specific forms of education can assure him greater product with less labor. Every child and man seeks to gratify intellectual curiosity and esthetic interest; education can increase the possibilities and simplify the methods of obtaining such gratifications. Even those varieties of religious education designed to assure the salvation of the soul may be given and received primarily with the happiness of the individual alone as the controlling purpose.

Social purposes, however, control, implicitly or explicitly, in most forms of public or other "large-group" education. That is, it is the educated man's usefulness to his fellows in family, village, economic union, party, or state that finally justifies such education. The man who is healthier, wealthier, or wiser because of education may himself get much satisfaction from these forms of well-being; but no less he also gives, or is expected to give, satisfactions to others likewise because of these advantages. Education toward literacy, powers of arithmetical calculation, or vocational proficiency are probably often conceived by parents as contributing directly to the well-being of their children; but statesmen and other far-sighted ones expect that the literacy and the other attainments of individuals will also make of these better soldiers, citizens, producers, exemplars, and parents for the social groups in which they have membership.

Such social incidence of individual education can not, of course, always be guaranteed. A man trained to use a sword, a pen, or even a sacred book, may use his training against his friends, his fellow citizens, or the state. Not a few men use their vocational powers to exploit their economic fellows, just as others use their physical health and strength in predatory activities. It must often happen, too, that the esthete or other self-centered person seeks to monopolize to himself in largest possible measure the gratifications due to his powers, as increased and specialized by education. There may be miserliness of knowledge, security, fellowship, or even of religion, as well as of economic and esthetic satisfactions.

Hence the modern world, confronted by steady multiplication of complex problems of making large social groups efficient, seeks to produce varieties of education that will directly "socialize" men—that is, adapt them, through habituation, appreciation, ideal, and insight, to effective membership in complex and imperfectly understood groupings. Moral education has always been one form of social education, obviously. But moral education is largely an affair of small groups—family and neighborhood, and elemental face-to-face relationships of buyer and seller, employer and laborer. Religious education, too, is an ancient and powerful form of social education. But, effective as it has been in its purer forms, it has apparently but slightly prepared men for adjustment to modern social interrelationships on the gigantic scales entailed by contemporary social evolution. Here civic education, as the term is now understood, offers very large promise for the future. It must be scientific and democratic—a difficult combination for pedagogy. But on it rests the large socialization of men.

The aims of these larger forms of socializing education are still necessarily nebulous—they are reflected in aspirations rather than in plans. And the methods of such education may well prove elusive and difficult, even when objectives shall have been more clearly defined than they are at present. Nevertheless, only through civic education will it be practicable for men to conserve and consolidate the gains already made through civilizations, in so far as that depends on "large-group" coöperations and coordinations.

THE SCOPE OF EDUCATION TOWARD SOCIAL EFFICIENCY

Education has already been defined as including all purposive controls, toward approved ends, of growth and learning processes. It is important to grasp the inclusiveness and implications of that definition. Only a

part,—and as respects some objectives a small part—of such education can or should be effected through schools. External agencies must regulate and enforce it for children, but for adults it must be largely self-directed. Self-education now plays an immense part in the civic, vocational, and cultural education of all Americans between the ages of twenty-one and sixty. Newspapers, books, experience, fellowship contact, reflection, are but a few of the means of such self-directed and self-enforced education. Agencies of collective action—the state, churches, municipalities, clubs, associations, schools, parties, corporations—may facilitate and encourage such education, but the adult free individual takes it or leaves it under little external compulsion.

From these considerations emerges a principle that must be given a variety of concrete applications later. Schools are agencies whose primary purposes are education. They are necessarily expensive. Their educational offerings must, therefore, be far more effective in purpose and method than either the by-education of other agencies influencing childhood, or the self-education of later years. In general, it is not profitable that schools should undertake specific forms of education that are reasonably well accomplished along these other lines. Some hygienic practices must be taught by the school, if they are to be learned at all; but a large part of every-day hygiene is, and will long continue to be, best taught in the home or on the playground. Some forms of moral attitude, insight, and ideal, schools must teach; but a much larger proportion can be much more effectively taught in home, church, shop, and street. The school can and should teach the individual to read, and how to find good reading; it may even find ways of inspiring him to want long to continue to do good reading. But it should not, even if it could, seek to direct and control such reading into mature years.

In other words, there are many kinds of educational agencies, of which only one type makes education its principal business. In most cases the functions of schools are, therefore, in greater or less degree residual, corrective, or initiatory—and if any particular school can not discover in just what respects its functions are thus complementary to those of other agencies, its contributions to social efficiency will be uneconomical and probably ineffective.

The home teaches the child the vernacular without expense to society, or serious effort on its own part. It is a proper function of the school to correct deficiencies of speech produced by family education. But, commonly, the home can not well teach handwriting—hence the school has primary responsibilities for insuring mastery of this useful art. Many

vocations are now well learned on the basis of apprenticeship, or even the imitative methods of "pick-up" vocational education. But where such by-education no longer suffices—as seems probably to be the case in an increasing number of vocations—special schools will be required to teach all, or some part of, such vocations.

These illustrations could be multiplied. Their purport is obscured in not a little contemporary discussion of school education. Educators are naturally prone to ignore, to undervalue, or even to disparage extra-school and post-school education. Such attitudes will necessarily entail distorted conceptions of purposes, scope, method, and values of school education. Medicine once conceived its chief functions as healing. Now it best serves society by such preventions as render healing unnecessary. Good statesmanship finds its highest rewards, not in wars to execute, but in peace continued. The future will show us many forms of education in which the highest service of teachers will be rendered by planting certain seeds and leaving the plant to grow. A wiser generation than ours will probably find it desirable to bring small children fewer days and fewer hours into school rooms than we now do in cities, and to coöperate in making home, street, and play-place more educative. The good vocational school of the future will almost certainly not provide its own facilities for productive work whilst factories, farms, shops, homes, and transport are actively at work in their midst.

Not only must the school ascertain its proper residual functions in certain fields of education. It must learn to discriminate endlessly among individuals, even as respects the exercise of its primary functions. High schools in American suburbs are now often painfully drilling certain pupils in English literature who already surpass their teachers in genuine literary appreciations. Without any more civic education than their home surroundings give them, certain proportions of our high-school and college students are destined to go as far as necessary toward efficient citizenship. In not a few cases courses in physical training in schools and colleges suggest the folly of seeking to gild gold or to paint the lily.

Collective responsibility for integral and sufficient education is, obviously, destined to increase.[2] As the collective sense of need becomes better defined and more articulate,—these things being dependent upon clearer conceptions of educational objectives than we yet possess,—it will be possible to determine and evaluate educational contributions from non-school sources, and thus ascertain with more precision than is now practicable the desirable and practicable functions of schools. It may even

[2] See E. P. Cubberley, *Changing Conceptions of Education.*

prove practicable, at no material increase of social outlay, greatly to increase the educational values of such agencies as newspapers, moving pictures, municipal play-places, summer homes, young people's religious associations, public libraries, juvenile courts, and the minor vocational activities of young people in homes. The irrigator has often found it possible, by some slight diversion of a flowing stream, to convey water to large tracts of land. Probably in numberless directions the "natural" agencies of growth and learning can be made educative to degrees not now appreciated at all.

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CHAPTER III

THE OBJECTIVES OF EDUCATION—GROWTH, PLAY, AND WORK

A. "NATURAL" VS. "ARTIFICIAL" EDUCATION

INTERPRETATIONS OF EXPERIENCE

THERE are thousands of specific kinds of learning, and hundreds of kinds of education. The experience of every person abounds in examples. Very young children are taught in the household to wash and dress themselves, keep their playthings "put away," be courteous to visitors, retire at regular hours, use a fork properly, and refrain from injuring furniture or books. Supplementing their purely imitative learning, it is necessary from time to time to teach them the correct pronunciations of certain words, avoidance of erroneous language constructions, lowering of the voice in company, and respectful attitudes toward the aged.

In the play-place the boy is taught a variety of games, modes of behavior, attitudes toward the police, sources of danger, and avenues of surreptitious pleasure. Instinctive tendencies to imitate, emulate, and, in last resorts, to fight, keep him spurred up to a considerable tension during the processes of education carried on by play fellows. Every play-place and playing group possesses its own slang, epithets, half-formulated codes, beliefs, prejudices, and standards. These are disseminated and fixed by processes that blend growth and education.

The growing child under normal conditions learns much from elders other than parents. On farm, seashore, and hunting ground, the boy follows eagerly after adults, admiring their powers, sharing in the simple phases of their employments, copying their speech, and providing an eager audience for story, jest, and profanity. In shop and factory, and on railroad and street, he is usually excluded from any significant participation in adult occupations,—generally to his loss, be it said,—but nevertheless he acquires what he can of vital experience by using eyes, ears, and imagination. For good or ill, his environment is always more or less educative.

It is true, in a sense, that a child's growth tendencies, instincts toward the acquisition of experience, and will to do what he sees others doing, tend to spread out in every direction opened by his environment; and that parents, other elders, and play fellows operate as more or less constant checks upon these activities, thus imposing boundaries, regulations, and necessary adjustments. Much early education is thus necessarily negative,

restrictive, prohibitive. It seeks to turn anarchistic impulses toward profitable channels. It guides, adjusts, perhaps suppresses.

School education under modern conditions claims the growing and learning child for perhaps one hundred and fifty or two hundred days a year. The school has historically been created to attend only to certain parts of education. Because the home is often ineffective in teaching reading, or the catechism, or arithmetic, or Latin, the school is designated to assume these tasks. Hence are differentiated the objectives of school education—in common school, Sunday school, dancing school, trade school, Latin grammar school, military school, and the like.

Every informed person is at least dimly aware of the multiplication of the specific purposes of school education in recent years. We differentiate a thousand useful ends or purposes of education in schools, from kindergarten to university. We perceive the helpful or harmful effects of non-school education in the home, on the playground, in the club, at work. Because of this diversity of offerings, we moderns find ourselves incessantly forced to contemplate *choices* of educational values. Questions like these constantly arise, even in homes:

1. Is it important that children under six should attend kindergarten rather than play around their own homes?

2. Are large amounts of physical play essential to the growth of children? What kinds are best? Will certain kinds of physical work probably give equally good results?

3. Is it well for children to travel, as a means of education? To foreign lands? At what ages is such experience most valuable? Travel under what conditions?

4. Is it important that children be taught dancing? What kinds? At what ages? For what reasons?

5. If time permits, does it seem important that all children learn to use certain common tools and machines? Separately consider: carpenters' tools, gardeners' tools, miners' tools, printers' tools and machines, fishermen's boats and implements, cattle-drovers' horses and mechanisms, house-painters' tools, implements of cookery, tailors' tools.

6. Is it important that all persons be educated to "like" good music? Is this a practicable objective? Do people have to be educated to appreciate the photodrama? Why?

7. Is it important that all, or some, high-school youths be offered or required to take military training? Why?

8. Should every boy learn a trade? Take part in athletic sports?

NATURAL VS. DIRECTED GROWTH

A child is born into the world to-day. His proper care, development, and education become at once objects of the solicitude and effort of

various social agencies—chiefly, at first, his family in direct ways, and the state in certain forms of general oversight. As he matures, other agencies are expected to coöperate—schools, churches, play fellows, employers, police power, stage, press, clubs. Indirectly, physicians, toy-makers, merchants, house-builders, and numberless others will make contributions to the various forms of care, growth, experience, instruction, and training that will combine to "make a man of him."

Our imagination can readily follow this child until he becomes twenty-five years of age. What kind of man do those people of to-day who can most affect his progress want him to become? As they come to know better his hereditary qualities—his original nature—what will they find it practicable to expect him to become?

Only from some such starting point as here suggested can we differentiate and formulate the desirable and practicable objectives of education.

The growth processes—are they part of education? They are innumerable, ranging from those imperative kinds of bodily growth that are assured if only protection, food, rest, and shelter are provided for the plastic organism, to those very subtle forms of growth in esthetic and religious appreciation which take place only in the presence of delicately adjusted stimuli. It has become increasingly the accepted responsibility of several types of schools to minister to various *growth* or *developmental* processes—physical growth through play, social growth through "school led" coöperations, esthetic growth through provision of "artistic" environments, and growth of imagination through story and drama.

But schools are hardly suitable agencies to control, or even indirectly to affect, the great majority of growth processes. From birth to four years of age, the child *grows* rapidly in size, in strength and mobility of body, in speech, in miscellaneous experience, in social qualities, and in all forms of general knowledge. Even when, at ten years of age, he comes directly under the charge of schools for some thousand hours each year, he still spends more than seven thousand hours yearly with parents, play fellows, or alone in a non-school environment, during all of which numberless forms of growth are always active. Even when, at twenty years of age, he has ceased to live at home for nine months in the year, and comes under the direct intellectual control of college teachers for possibly one thousand hours each year, nevertheless large proportions of his physical, linguistic, intellectual, and especially of his social and esthetic, growth take place under conditions with which schools may have little or nothing to do.

FUNDAMENTAL DISTINCTIONS OF EDUCATIONAL OBJECTIVES[1]

Human beings, therefore, like other living creatures, are born into the world in very "undeveloped" form, but equipped with many pressing "potentialities" for growth. If a child can only get some food, shelter, rest, freedom, and safety from dangerous animals and bacteria, it proceeds to grow—in all senses of the word. It "grows" in size, weight, powers of movement, knowledge, affections, hates, laughter, speech, and desires to imitate various sorts of "sensed" activities of others. We say that it "learns" to take food, to smile, to walk, to speak, to play with its fellows, to like stories, to ride a "scooter," to climb trees, to conspire with the "gang," to steal fruit, to hunt, to take an interest in the opposite sex.

"Natural learning," as all of this is, should, obviously, be distinguished from other types. Commonly, the individual "wants" to accomplish it in the same insistent way that he wants food, rest, and sleep. Back of it all there are strong instinctive "urges," pressures, or hungers. Teachers have frequently to be reminded, not so much of the existence, as of the very great educational significance, of these keen natural desires found in all normal growing children, to "carry out" up to certain points the instinctive tendencies to imitate, to gratify curiosity, to seek new experiences, to make "trial flights" of all sorts, to seek companions, to compete and coöperate with these, and to follow gladly the lead of elders.

We can best visualize the range and intensity of the processes of "natural learning" by imagining a small group of boys and girls with very lax parents, no schools, and no churches, growing up in a mountainous and forested frontier. This group would evolve as young savages. Assuming that the elders would set them examples of living in houses, keeping fires, hunting game, cutting wood, brewing liquors, carrying on feuds, dancing, and the like, we can easily imagine what the children would become in good and bad ways, simply through imitative and other more or less instinctive reactions on their environment. By the time manhood or womanhood was reached, they would have learned to appreciate (to care for, dislike, love, or be contemptuous of), and to do, numberless things. Probably they would never have learned to "work" their minds—that is, to "study," to think or observe in concentrated and systematic fashion, or to acquire knowledge or record it in the laborious ways of reading and writing.

[1] See D. Snedden, *Sociological Determination of Educational Objectives* (Ch. 2 and 3).

From the standpoint of youthful interest and understanding, these "untutored" savages would have had a "perfectly glorious" time. Nearly all of their time they could do "what they wanted to." They could be ceaselessly active physically, socially, mentally, along play lines. When they felt like it they could eat, sleep, gossip, and, like their greatest American interpreter, Whitman, "loaf and invite their souls."

"Artificial learning" comes when primitive man (or modern man, too, on the frontiers, whether in the natural wilderness or in the city slum) begins in some collective way to perceive the advantages of ordered life, of carefully storing the accumulations of experience, and of training for the difficult cultural, civic, and vocational pursuits gradually developing. Artificial learning is as different from natural learning as are the processes by which water is artificially controlled in ditches and pipes different from the "natural" behavior of uncontrolled water. In a sense, certainly, all learning is "natural," just as the domestication of animals, and the making of leather, steel, houses, and statues are simply extensions of natural processes. What is here conveniently called *"artificial* learning" is clearly not *unnatural* learning. But it is planned, man-directed, and justified in terms of man's supposed needs.

Artificial learning, except in some later degenerate stages, is always based upon conceptions of predetermined goals or ends held by parents, war leaders, priests, or other adult guides, consciously or as half-conscious customs. Only a few of these goals or purposes have to do with the "present" needs or usefulness of the plastic children or youth being trained or instructed. Most of them are truly "projective" purposes —they look forward to an adult time of full activity or functioning.

The earliest varieties of artificial learning are, obviously, only such sporadic modifications of natural learning as can be seen in any family group where social behavior, speech, or coöperative activities are involved. The child is allowed to "grow naturally" in his behavior, except at certain points where, by specific direction, prohibition, or training, he is "taught" certain manners. He "grows" in speech, but occasionally is forbidden to use an unseemly word or is forced to correct a badly formed expression. He is first allowed freedom in "helping" in domestic occupations, as his purely imitative nature suggests, and then he is forced to perform certain relatively irksome tasks, or to acquire better skills.

Naturally, the first schools—meaning thereby any agencies having education as a conscious primary function—were designed wholly to promote "artificial learning." For thousands of years, doubtless, the only real schools were those which trained male youth in the arts of war-

fare, since it was in these that men were most insistently competitive, and it was here that the "artificial" so early succeeded to "natural" in means of combat. For all the ordinary activities of life the processes of instinctive imitation, supplemented by moderate amounts of "forcing" through custom, taboo, and the displeasure of elder workers, sufficed.

When the "eras of conquest," accompanied by government of the subjugated, began, it was obviously necessary that the sons of the conquerors should be trained for "government," as well as for fighting and royal sports. The educational procedures of all early societies whose records are preserved are to be interpreted in the light of the conscious need of "training" young aristocrats for their important places. Tutors of various kinds are employed to train toward ceremonial, law-giving, and diplomacy as well as in horseback riding, combat, and hunting.

When the arts of reading and writing come to be considered socially important for any class,—clerics, aristocrats, business leaders, the citizens of a democracy,—an era of artificial learning sets in at its best—and worst. We can sympathize somewhat with the prospective count or knight sent from home at seven years of age to learn the "arts of chivalry" as page in the castle of a friendly ruler threescore of miles away. But real "child labor" began when small children were set laboriously to learn to read and to write a language that was often not the vernacular, or was at best a much differentiated form of it. The contemporary example of small Chinese children toilfully striving to read and to write the complex symbols of a language which to most of them is far removed from the family's vernacular seems best to indicate what was probably almost everywhere until recently the story of schooling toward "literacy."

"Schools" as agencies of artificial education have, of course, like all other human agencies evolved through processes of "trial and error," been in numerous instances and over long periods ineffective, more or less tyrannical, cruel, corrupt, and destructive. Like religion, medicine, war, government, marriage, and mechanical industry, they have been essentially means in human evolution, even though at times and places they probably did more harm than good. School education, like theocratic religion, oligarchic government, bureaucratic medicine, and militarism, can readily become a means of stifling natural growth, of "taking all the joy out of life." But civilized societies can not dispense with schools in general on that account, any more than they can dispense with medicine, defensive war, politics, or machine production because of the abuses that have crept in, and that may still await intelligent correction.

The combination of natural and artificial learning under school aus-

pices is a thought of only yesterday, historically speaking.[2] Men of sympathetic nature doubtless long ago pitied children early chained in the treadmills of formal schooling, just as the hearty American pities the dogs harnessed to the heavy carts of Flanders. But usually they could do nothing about it. Could these children become fully effective and happy men and women without this painful preparation in childhood? "There is no royal road to geometry"; neither was there to ability to write, to read "writing," or, later, to read printing.

In spite of it all, most of the children survived, and many of them developed into strong men and women. Of course they got their "natural" education outside of school days and school hours. Except in a few orphanages, shops where apprentices "lived in," and some very perfect boarding schools (by current standards), it seems probable that most children, even during those centuries from the thirteenth to the eighteenth when society was striving desperately in so many ways to become "civilized," did get many opportunities to play vigorously in "big muscle" ways, to satisfy their instinctive curiosities, sociabilities, and loyalties, and to try their native ingenuities in endlessly manipulating the human and material things around them. They insisted on obtaining "developmental experience." In a social environment afflicted by many taboos, conventions, and devotions to the "serious life," naturally the children, and especially the youth, very often ran afoul of the regulations and the expectations of their elders. Naturally, too, there existed something of an armed truce, if not an only half-suppressed warfare between children seeking natural expression, and parents, teachers, priests, and the other staid elders of every community. The Puritan thought that the play impulse was an infection from below. It seemed easy to some of our forebears to believe that the "original nature" of man is altogether toward sin.

B. WORK-LEVEL AND PLAY-LEVEL EDUCATION[3]

INTERPRETATIONS OF EXPERIENCE

A recent writer, Professor Bobbitt of Chicago University, has elaborated distinctions between "play-level" and "work-level" education. These distinctions should prove of much assistance to educators in interpreting and adjusting the various objectives of modern education. Children, youths, and adults learn endlessly through play; but not all kinds of play are equally educative in terms of contemporary social needs. Hence education can make choices, not only as between the natural learn-

[2] Compare J. Dewey, *School and Society.*
[3] A valuable analysis is found in F. Bobbitt, *The Curriculum* (Ch. 1-3).

ing of play and the artificial learning of work, but also as between different kinds of natural or "play-level" learning.

To this end, we need far more adequate understanding than we yet possess of the fundamental distinctions between play and work. Some naïve idealists try to pretend to themselves that all work should or could be carried on in the play spirit. That is true of a few kinds of work, certainly. It is also true that long habituation to certain kinds of work produces an addiction to it that may be hard to distinguish from the devotions of play. But the common experience of mankind generally and persistently makes distinctions of the most real sort between play and work. Certainly these can and do enter into all school activities. The experience of each one of us is, after all, a prolific source of possible and very genuine interpretations here.

1. What are some essential differences between play and work? To what extent do children under six "instinctively" play? Instinctively work? Make same distinctions for other age levels among civilized man, at ages six to ten, eleven to fifteen, sixteen to twenty-one, twenty-one to thirty, etc. Same, among savages. Distinguish for mental and for physical work.

Can children of ages six to ten be taught "to work"? Mentally? Physically? Are children of these ages frequently held "to work"? For what periods, usually? Repeat analysis for the higher age groups.

Are substantial amounts of physical work supposed to be "good" for ages three to six, six to ten? Higher age levels? Why? Is "mental" work supposed to be good for children of these age levels? Why?

2. What are some types of learning that seem usually to take place "naturalistically"—in the play spirit? Separately consider vernacular speech, domestic habits, legend (from stories told), primitive arts, sports, bodily skills, and others. What are some forms of learning that seem usually to require "hard work"? Separately consider: acquisition of an alien language in maturity; mastery of mathematics; learning a trade or profession well; learning an art well—painting, piano playing, fiction writing, and others.

3. What are the usual characteristics of play as to: dependence upon instinctive desires or appetites; necessity for continuity, order, exclusion of competing stimuli; outcome in utilities—products, services; resulting fatigues? Contrast similar factors in work.

What kinds of "productive activity" are often carried on in the play spirit? Consider separately: wheat growing; acting; home-making for normal family; factory shoemaking; writing of fiction; elementary school teaching. Repeat analysis, separately considering workers of: (*a*) exceptionally good ability and training; (*b*) those of only average powers; and (*c*) the markedly inferior in that field.

Is toil a species of work? Drudgery? What are the peculiar qualities of these species? Is work usually done under "compulsion"? What kinds—

the compulsions of personal coercion (slavery, prisoners), economic need, ambition for distinction and power through the results, inherent interest in the activity itself?

4. Would you consider it desirable to divide all activities under high-school control or influence—studies, discipline, volunteer performances—into two categories, according to purposes to be realized—the "projective" and "developmental"? (Assume that "projective ends" are values chiefly to be realized in specific form in adult life; that "developmental results" consist of immediate "high-grade" satisfactions through present activities and possibly some obscure values toward needs of later life).

In which category would usually be placed: reading powers in French; pre-engineering trigonometry; athletics; current events; school dances; stenography, learned as a vocation; economic problems; concerts heard; gardening, for city boys; a trade; college preparatory Latin?

Would it seem desirable or expedient to alter the aims now often held for: English literature; oral expression; general science; "applied art"; medieval history; collective or chorus music?

5. Do you deem it advisable to (*a*) require, or (*b*) advise, pupils to take what for them are "hard work" studies, if the "values" of these in adult life are much in doubt? How will your answers vary according to availability of probably more profitable alternatives? What have been "values" to you of your work in algebra, foreign language, physics? Are these pious faiths with you, or convictions based on knowledge? To what other studies, never taken, could you, as you think back, profitably have given the time and labor required for the algebra and others?

In a certain high school are a considerable number of girls and boys of whom it is practically certain that none will go beyond the eleventh (third high-school) grade. Their time in the tenth grade permits the taking of only one of these courses: (*a*) plane geometry, made difficult by heavy stress on "original" problems and practical applications; or (*b*) economic problems, made difficult by emphasis on concrete problems, and need of close reasoning. Which would you recommend, and why?

6. Many very important, as well as some very obscure, current problems of educational values are involved in the proper interpretations of play, work, and recreation. These problems even far transcend the schools in their ramifications and potential effects.

a. Biblical writers associated work with divine displeasure. Do tropical peoples and normal growing children still regard "work" as a cursed thing? What of the attitudes of coal-miners, factory hands, tillers of the soil, hewers of wood and drawers of water?

b. What are certain sociological facts as regards the work of: former North American Indians; enslaved negroes; Eskimos; Chinese coolies; conquerors of the medieval type; explorers; gold-miners or prospectors; free

tillers of the soil in cold parts of Europe; recent immigrants; women of poor classes; writers; captains of industry; college students?

c. What are differences between the "work" of animals in domesticated state (oxen, horses, camels, elephants, dogs) and their work in the natural state?

d. Do ants, squirrels, beavers, birds, work? What are essential characteristics as to interest, fatigue, competition, etc.? How does such work resemble play of children?

e. Think of adults thirty to fifty years old in common vocations—lumbering, mining, tillage, factory production, table waiting, home-making, street-car motoring, seafaring, school teaching, bricklaying—employed for three hundred days yearly from eight to twelve hours daily. What are their usual conscious motives for pursuing work? How have their habits become so shaped as to make prolonged discontinuance of routine painful? What are usual features in their work of drudgery, toil, arduousness, painful routine? What portion of the work is done in play spirit? What is the usual spirit of the last hour of each day's work?

Would these workers usually give up their work for leisure, if living were assured? Would they give it up for other kinds of work at equal pay? From what motives?

PLAY AND WORK AS MEANS OF EDUCATION AND DEVELOPMENT

Play and work, in the varied experiences of all men, are very different things, although it is hard at certain points to define the essential differences. The difficulty is increased by the fact that often, and especially in childhood, play is a means of *growth,* whilst at other times, and especially in adult life, it is a means of *recreation.*

To a large extent, play is pursued because of immediate desire, or pleasure in it; whilst work is done under the compulsion of need or circumstance. Play can be terminated when desire is satisfied, but commonly work must be carried on long after intrinsic interest in it ceases. Play is rarely productive of economic utilities; whilst work is accepted primarily because it produces desired economic goods or security.

To a child or man with energies fresh and interests keen, the earlier stages of any "job" of work can usually be carried on in the play spirit. But when such a job is followed long it becomes labor, perhaps drudgery. There are probably a few vocations—those of the artist, inventor, and naturalist may be examples—which can only be effectively pursued whilst the full play spirit lasts. But the bulk of the world's work in farming, sea-going, mining, housekeeping, teaching, and manufacturing is done by people who, however much they have eventually become habituated or

broken to it, would be glad to change to more playlike activities if they were completely freed from economic necessity.

Play and work obviously shade into each other in a twilight zone between the more well defined forms of each; but confusion will be avoided if we confine the present discussion to what every-day experience clearly recognizes as decisive examples of each kind. All clear-cut varieties of play are carried on with much natural interest, either in the process, or in some immediate outcome—including often "winning" in a competition; they are unproductive of economic utilities, they are largely unconstrained, and can be terminated when interests flag.

Nearly all well defined forms of work derive their interest from some external and possibly remote source—involving even such motives as desires to escape punishment (slave labor), to avoid poverty in old age, to win in competition with rivals, or to accumulate wealth or power. Work commonly results in economic utilities which, consumed or exchanged, give the producer the means of livelihood and other sumptuary satisfactions. Commonly, also, work is done under various forms of direct or indirect constraint which often oblige its continuance long after intrinsic interests have given place to feelings of fatigue and drudgery.

Many varieties of play should be recognized in both child and adult life. For practical purposes it is profitable to distinguish *physical* from *intellectual* play, and both from *social* play, according to certain predominant qualities in each, even though such distinctions are only partially justified by psychological considerations. Much physical, and some intellectual, play is, obviously, carried on coöperatively, and is therefore social in part. Probably there are forms of activity, such as card playing, smoking-room or tea-table gossip, or sheer unforced companionship, in which the growth or recreation of the more pronounced social instincts is the "purpose of nature." But it is also probable that the instinctive needs of children and adults for many and varied forms of physical and intellectual play can be satisfied in isolation nearly as well as in social groups, once appropriate incentives are acquired. The social stimulation of example, competitive performance, and group approval are important stimuli to play activities of all sorts; but they are certainly not of its essence, any more than they are of the essence of work.

The values of play toward growth are now generally appreciated by educators and parents, even though little is yet known about right standards of kind and amount. The more sympathetic students of childhood are inclined to trust largely to "instinctive nature" where it seems that the conditions of environment are fairly normal.

FOR SUPPLEMENTAL READINGS AND REPORTS

BAGLEY, W. C. *The Educative Process* (Ch. 1-3).
BODE, B. T. *Fundamentals of Education* (Ch. 2, Educational Values).
CUBBERLEY, E. P. *Changing Conceptions of Education.*
ELLWOOD, C. A. *Sociology and Modern Social Problems* (Ch. 16, Education).
GROOS, K. *The Play of Man.*
HANUS, P. *A Modern School* (Ch. 5, The School and the Home).
JOHNSON, G. E. *Education by Plays and Games.*
LEE, JOSEPH. *Play in Education* (Book I, Play as Growth).
ROBBINS, C. L. *The School as a Social Institution* (Ch. 12-13, Aims of Courses of Study).
SADLER, M. *Continuation Schools.*
TODD, A. J. *The Primitive Family as an Educational Agency* (Ch. 4).
WARD, L. F. *Pure Sociology* (Ch. 20, Socialization of Achievement).

CHAPTER IV

THE OBJECTIVES OF SCHOOL EDUCATION

INTERPRETATIONS OF EXPERIENCE

EVERY reader of this book has had prolonged experiences with schools. All should be able to give valuable interpretations to these questions:

1. Are the "educational values" of the following forms of instruction or training expected to be realized chiefly when learned, or in the later years of adult life: French, studied at ages thirteen to sixteen; spelling of difficult but frequently used words; trigonometry, studied between sixteen and eighteen; long division, multiplication of fractions and the computing of interest, studied in intermediate grades; the printing trade learned under apprenticeship from sixteen to twenty? Would it be proper to apply the term "deferred," or "projective," values in describing the objectives of these forms of education?

2. Do these activities have educational values—and are such values found chiefly "at the time," or in later years: physical play (all ages); games like tops, kites, marbles; fairy stories; attractive fiction or accounts of travel, read at ages twelve to sixteen; dancing, ages fourteen to eighteen; gardening, wireless, printing, woodworking, done voluntarily, and in amateur spirit, at ages twelve to sixteen?

3. Is there such a thing as "intellectual work"? What are its characteristics? Do we expect it of kindergarten pupils? High-school pupils? Why is it more appropriate to the first than to the second group of "studies" listed above?

4. Do we ever "learn" through intellectual play? What are the characteristics of intellectual play? Distinguish, as to methods and accompanying conditions, between your intellectual work and play. At your age is your intellectual play educative, or only recreative? Are the methods by which all people learn: the early stages of vernacular; to play childish games; to enjoy stories and whatever is obtained from the moving pictures, parades, circuses, etc.; the local geography of the summer camp—best described as "play" or "work" methods?

5. In which one of each of these pairs of possible school offerings is "freedom of election," "flexibility of method," the "spirit of the play method," and a variety of interesting projects the more practicable: story reading (of in-

teresting kinds) or handwriting—in the lower grades; Latin or gardening, at ages fourteen to sixteen; percentage arithmetic or travel geography, in the upper grades; reading of musical notation or "appreciation of music"; physical sports or the learning of a trade, like stenography or tinsmithing, at ages sixteen to eighteen?

6. For convenience, we may designate as *"projective," A class* or *alpha class,* all those specific forms of training or instruction which are taught primarily for the sake of their usefulness in later life; and as *"developmental," B class* or *beta class,* all those activities or forms of learning which seem to have large immediate importance in the physical, social, intellectual, and esthetic development of the child. In which class would you place each of these: long division, third or fourth grade; a children's party; winter sports with sleds (ages seven to twelve); a high-school dance; first-year (high-school) algebra; "hard" spelling, third to fifth grade; learning the vernacular in homes, second to fifth years of life; Latin; those portions of geography and history commonly tested by "external" examinations; home gardening by town boys; high-school literature to meet college-entrance standards; ordinary sixth to eighth grade arithmetic; drill in piano playing; listening to attractive music; attendance on photodrama; learning a trade (ages sixteen to twenty); the activities of the usual summer camp for girls; reading of library books (voluntary)?

7. Let us, for convenience, classify under the head "natural learning" all those forms of growth in bodily powers, knowledge, appreciations, ideals, and the like, that, given a favorable environment of materials, examples, and incentives, take place without visible compulsion, hard conscious effort, drill, or training; and as "artificial learning" all those forms of training and instruction that, in the past at least, have usually been accomplished under more or less compulsion, discipline, drill, and conscious effort. In which category would you place each of the following forms of learning: one's mother tongue to the point of easy communication with peers; to walk; "goose-stepping"; to read, at six to eight years of age; to enjoy the *Saturday Evening Post* after one has finished the eighth grade; high-school trigonometry; general science from *The Book of Knowledge,* general science from *Robinson Crusoe;* general science as presented in existing textbooks; sloyd; learning to swim in the "old swimming hole"; learning skilful dressmaking?

8. Does "natural learning" as we observe it usually involve much drudgery? Hard work? The shutting out of competing pleasures?

Is "artificial learning" usually thought of as easy? As play? As necessitating shutting out of competing pleasures?

Is it probable that most "natural learning" coincides with the "developmental learning" referred to above, and that most projective learning coincides with artificial learning?

Would it be advantageous to recognize certain school objectives as of a "play" order, and others of a "work" order? Which kinds in each case?

9. Using the foregoing distinctions, can you show that there are in the subject of geography, taken in its broadest aspects, certain detailed facts, conclusions, and methods of search or representation that should constitute alpha or projective objectives in schools; and certain other materials that should be regarded as of the beta or developmental order? In which class would you place: geographical moving pictures; definite memorization of the capitals of the chief countries of South America; ordinary books of travel; attractive accounts of the fisheries of Nova Scotia, the diamond mines of South Africa, the Gulf Stream, the traces of old civilizations in Central America, central African game; fairly definite knowledge of the chief trade routes of the world?

10. Using the same distinctions, suggest standards to guide in dividing American history into two "subjects"—a small body of material to serve alpha ends, and a large body (perhaps ten thousand ordinary pages) to make a beta subject (for grades five to eight inclusive).

11. What are the primary social values to be realized through direct and efficient *vocational* education in: dentistry; stenography; navigation; house carpentry; electric wiring? Are these measured almost entirely by the resulting competency (over a reasonable series of years) as a producer of useful service on the part of the person trained? Or are there other values to be recognized?

12. What are the primary social values to be realized through direct and efficient liberal education in: high-grade music; nineteenth-century poetry; Greek language and literature; English history; economics; chemistry? Are these to be measured primarily by the resulting competency of the person educated, not as a producer, but as an *appreciator* and *utilizer* of these values?

13. Is it at all common, desirable, or expedient for one person to be trained or proficient in several vocations—law *and* medicine; carpentry *and* plumbing? Is all economic progress accompanied by increased vocational specialization? Why?

What qualities of appreciation, interests, and powers of high-grade utilization would you expect to find in a man alleged to have an exceptionally broad and modern liberal education? What appreciations would he have of many or all of these: good types of concert music; recent good French literature; the geography of Africa; recent progress in biology; politics of central Europe; Rodin's art; current "radical" poetry; recent American achievements in industrial chemistry; political reforms in our large cities; modern views as to the treatment of criminals; Einstein's theories; the government of Russia; improvement of moving pictures; recent archæological discoveries in Egypt?

Is not all evolution of civilization, and the amassing by society of a richer

social inheritance, accompanied by extensions and deepenings of the opportunities of *liberal* education?

14. Define the areas of vocational activities in which you are (*a*) proficient in a marked degree; (*b*) slightly proficient; and (*c*) capable of working as an "unskilled" worker.

Similarly, define areas of modern culture in which your appreciations, tastes, information, and interests give you the right to be treated as (*a*) well "cultivated"; (*b*) moderately cultivated; (*c*) slightly cultivated. (Break up fields of literature, science, art, foods, furnishings, geography, expert services, etc., into particular areas for this purpose.)

15. Given the case of one hundred boys from American working-class homes, of good to fair ability, who can give four years, between ages fourteen and eighteen, exclusively to getting a good liberal secondary education in a high school. Assume that the elementary school has done its work fairly well, that none of these boys will go to higher institutions, and that you have entire freedom to devise a curriculum of liberal studies for them. From what areas of our "social inheritance" would you select? What kinds of materials?

Would you choose Greek literature? Astronomy? Recent advances in medicine? Current national politics? Classical music? Medieval history Japanese life and history? Recent European geography? Fabrics? Immigration? Problems of pure foods?

What use could you probably make of: the Metropolitan Museum in New York; the best of current magazines; contemporary poetry; the large current literature of social betterment; modern interests in out-of-door life?

What time would you wish to give to these traditional high-school studies: Latin; French; physics; Greek and Roman history; algebra; classical English literature; English composition?

Looking back, upon what "principles" would you base your proposed "liberal" curriculum?

EDUCATIONAL OBJECTIVES OF SCHOOLS[1]

Elementary schools of the more approved kinds now have a very wide range of purposes. They undertake to *train* their pupils to read, to write, and to "cipher." But they also encourage these pupils to play, to enjoy music, and to satisfy some of their instinctive curiosities about natural phenomena. The pupils are definitely *instructed* in certain facts of geography, history, and hygiene. But they are helped to gratify their

[1] Very few of the numerous available books dealing with elementary school pedagogy enter seriously upon problems of comparative educational values. But consult: F. Bobbitt, *The Curriculum* (Parts II-VI); J. L. Meriam, *Child Life and the Curriculum* (Ch. 5-12); and M. V. O'Shea, *Dynamic Factors in Education* (Ch. 2-8).

inherent desires for pictures and stories of travel, for real or feigned stories of adventure, and for understanding the functions of the bodily organs.

Secondary schools, at their best, now so train their students that they can meet fairly exacting tests in Latin, algebra, ancient history, modern language, physics, and other similar studies. But they also encourage in various ways the activities of their students in physical sports, debating, dramatics, excursions, participation in dances, attendance on the best "movies," use of public library, and coöperation in scouting and young people's church work.

Extra-school educative activities of many kinds are participated in by young people, which are as yet quite uninfluenced by schools. The play life of home and street, the vacation camp on seashore or upland, the evenings passed in the home, the sharing in the work of the home—all these are, of course, very educative in a variety of ways.

The historic function of the school—any type of school—was, apparently, to train and instruct youth in those arts or forms of knowledge which home and school environment did not give, or at least did not give well. Formerly pupils went to school to learn reading, writing, the catechism, Latin, grammar, mathematics, geography, and history—and perhaps music, painting, decorative needlework, and other "accomplishments" —because mastery of these was deemed essential to the educated man or woman. Hence the historic school did not spend (or "waste," as the older schoolmasters would have it) time on sports, informal content reading, stories, easy practical arts, and the scores of other "natural" activities which some schools of to-day aid and promote.

The historic boarding school, of course, had to supervise free activities out of school working hours; but only an occasional Arnold, apparently, appreciated that these had, and could be made to have more, educational values.

The kindergarten has introduced a new set of aims into school education. From the outset it recognized the educative value of environmental influences as exerted by parents, household, play-place, and other contacts. But it believed that these in their *natural unorganized* form were often insufficient, and sometimes bad. The kindergarten school has therefore tended increasingly to become a school of development—possibly a school to aid nature in assuring the wholesome growth of the child.

Kindergarten ideals, the doctrine of interest, appreciation of the shortages of urban environment for children, child study, and other causes have contributed to the rapid evolution during the last quarter of a cen-

tury of professional and public appreciation of types of educational need and method which were unfamiliar to our forefathers. The effects of this are now very apparent in the best primary-grade curricula; and even in upper grades and high schools the effects are traceable in all progressive theory, even though as yet but slightly in practice.

The objectives of school education are greatly confused by these new developments. The older education rested itself solidly on the ground that it was "preparation for [adult] life." Its studies and courses were composed principally of materials—literary selections, mathematical problems, grammatical speech, exact knowledge of geography and history, ability to read Latin, well defined religious creeds, bookkeeping, accurate science—that adults had found valuable, or as to which they deplored their own shortages. No one thought that such work was easy—in fact, if it seemed too easy it was supposed not to have real educational worth. Many educators really believed with Mr. Dooley, "It doesn't matter what ye teach a boy—so long as he does n't like it." But modern pedagogy found that in much of older education the approaches were too abrupt or too artificial for sound progress. A still more modern pedagogy discovers that the "interest" of the learner—his motivation for the work—is also a factor in good learning. Under some conditions learners can, clearly, be led faster than they can be driven.

But the conception that "education *is* life" (displacing the doctrine that it is the primary function of the schools to "prepare for adult life") seems to many to invalidate the old methods. Many ambitious educators are trying to use the old bottles of objectives for the new wine of methods, with comical results. "Education must be adapted to the needs of the children"—present needs or later needs, do they mean? So they try to manipulate environment and incentives so that a pupil of eleven may come to feel that he "needs" long division, grammatical speech, and some fairly exact knowledge of South American geography.

Educational objectives are of many kinds, as previously shown, and these may be variously classified. But a classification based on the expected time of the optimum functioning of these objectives is of utmost importance in curriculum making. There are proper objectives of school education that are, or should be, truly projective—that is, the power produced or knowledge stored is not expected to function usefully until some time later in life. But there are other objectives that grow out of the proper purposes of educators to aid present processes of growth or development.

It is possible, and under some conditions highly desirable, that children

at six or eight years of age should learn the multiplication table very exactly, though manifestly they can not for ten or a dozen years yet put that knowledge to practical use in their activities—aside from the relatively artificial ones imposed through more schooling. But children from one to three years learn the vernacular—not, then, with a view to adult needs, but in order to share in the life about them.

The educative process as a whole—in school and out of school—must be studied in order to obtain perspective wherewith to classify objectives. Let us use the words *growth, development, nurture, learning, training,* and *instruction* as all embodying purposes with which education in its broadest sense is concerned.

Every child, as noted earlier, *grows* as a result of its nurture and environmental conditions. It grows in size of body, differentiation of organs, and "instinct-pushed" activities, in experience, in friendliness, in pugnacity, and in numberless other respects.

Or we can say that he *learns* to walk, talk, roam, ride, dance, court, work, lead, worship, and serve. He learns to care for certain people, to desire certain fine art, to hold his own counsel. He learns from his contacts with parents, play fellows, adult friends, enemies, pictures, books, and newspapers. He even learns from brooks, stones, wild animals, and the stars.

We may say that he develops or evolves his powers. At first his physical coördinations are few and imperfect, but, given time and opportunities, he develops the endlessly varied and incessantly exercised physical activities of a normal boy of ten. Given incentives and opportunities, he develops a host of likes and dislikes, aspirations and convictions, interests and antipathies.

Any and all *recognition, supervision, control,* and *direction* of these growth and learning processes are properly a part of education, as that word must be defined in light of modern developments. In part we educate as we heal, by making it possible for nature to take its course; but in part, no less, we educate as certain medicines or surgery heals, by processes far removed from the natural, as ordinarily conceived.

Developmental objectives of education, as they will be called here, are those in which it is primarily the obligation of educators to provide wholesome conditions for natural growth or development—in all its physical, intellectual, social, and even esthetic and spiritual varieties. Developmental education in speech is assured by giving children example and natural incentives to exercise their powers of imitation in a suitable environment. Developmental physical education results if, after suitable

nurture, rest, and shelter are provided, the facilities of physical play are available—level places, steeps, running water, trees, snow, ice, cliffs, shrubbery, hiding places, sliding places, balls, wheels, missiles, pet animals, and, with it all, play fellows for competition and coöperation. Developmental education in reading takes place when, the mechanical difficulties of reading having been mastered, and sufficient maturity having been attained, one is given a library to roam in, or at least many books to read without sense of compulsion.

Projective objectives of education are those imposed upon youth against the long years of adult needs. Trigonometry, one of the world's most useful bodies of knowledge, can, with some effort, and sacrifice of more naturally interesting activities, be learned by able-minded youths between the ages of fifteen and eighteen. Perhaps the number who will later have serious occasion to use this science will never exceed 5 per cent. of all persons—for the present, apparently, male persons only; but to these it is supremely important. Between the ages of ten and twenty it is possible, perhaps under some degree of compulsion, and certainly at the expense of more immediately attractive activities, to learn much of French or Japanese, Latin or some other non-vernacular language. Perhaps not many should be induced to do this, having in mind society's other needs; but it may be very important, sometimes to individuals, sometimes to their church, sometimes to their nation, that some do learn such language, and learn it very well.

Should we not include as *projective* objectives training in handwriting, grammar, the more artificial aspects of arithmetic, sight reading of music, trade performance, bookkeeping, and laboratory methods? Silent reading, which can be fairly well learned between the ages of six and nine, comes to be very functional in the lives of many young people between the ages of ten and eighteen. A child of ten may be taught dancing, for which he cares very little, but finds it a most joy-giving, and a useful mate-finding, accomplishment from sixteen to twenty-five. During the last five centuries many boys learned Greek, probably under the severest of compulsion, only to find, when well along in manhood, that their early training now constituted a key to a wonderful treasure house.

Classification of educational objectives into the two groups here suggested is of fundamental importance to curriculum making, and in determining specific methods. (For convenience we shall hereafter refer to projective objectives as of the A or *alpha* class, and developmental ob-

jectives as of the B or *beta* class.) Beta objectives, ordinarily, seem to admit of very great flexibility of *means*. Physical play—from the simple, aimless individual or dual plays of little children, to the highly organized coöperative and group-competitive sports of adolescents—are essential to proper growth; but these need not be the same for any two children, necessarily. All young people should have their minds nourished—or, better, developed or educated—by an abundance of good stories; but there is no essential reason why all should have the same stories, or why, in fact, any two should, in their free reading, cover the same ground. Travel is, of course, very educative; but the world presents unnumbered opportunities for travel, and no two persons need traverse quite the same paths.

Alpha objectives, on the other hand, tend toward considerable definiteness. Handwriting, the multiplication table, spelling of the most used three thousand words, the essential facts of American history or world geography, the essentials of Spanish, trigonometry, or chemistry—all these, as organized for school purposes, perhaps as necessary in adult life, seem to represent areas of training and instruction in which flexibility, freedom to range and browse, and a wide variety of options are not at all practicable.

Thoroughness of learning seems to differentiate heavily as between the two classes, although, in the light of more adequate standards, this notion may prove illusory. But in certain fields developmental education requires and justifies less learning effort than projective learning. Stories read, games played, music heard, desires for exploration satisfied, make less exacting demands for *thorough* learning than do handwriting and other similar subjects. In fact, there seem to exist no good reasons why many beta subjects should not be approached and covered in the appreciative, semisuperficial fashion characteristic of adults in reading a daily newspaper or a short story, or in witnessing a dramatic performance. The modern studies in the schools—nature study, art appreciation, literature, practical arts, informal history—have greatly confused teachers, pupils, and external examiners because of the pernicious belief that the same standards of thorough learning should be applied to them as to the historic supposedly projective studies.

Expected functionings of learning, when properly differentiated, are related to this alpha-beta classification in some degree. Spelling, obviously, is studied in order that all the rest of life the *performance, execution,* or *doing* of spelling will be readily and accurately possible. Handwriting,

the multiplication table, typewriting for the typist, a trade, are taught so as to meet standards of doing, of practical performance.

But literature is not taught in schools of general education to make writers, nor music to make composers. School baseball may result in amateur performers, but is not expected to produce professional performers. We teach the hygiene of eyes and teeth for other purposes than the making of oculists and dentists.

Powers of performance should, in the determination of educational objectives, be separately considered, perhaps set in contrast to, abilities or capacities to *appreciate*. In some degree, all of us are expected to *appreciate* poetry, well cooked food, good work by policemen, the elucidations of science, and well played music, without being ourselves able to write poetry, cook meals, work as policemen, conduct scientific research, or execute music. As shown elsewhere, the vocationally efficient man is that one who in some special field—bookkeeping, ship navigation, cattle raising, or primary-school teaching—can render high-grade service with a minimum of wear and tear. But the culturally efficient man is in large part that one who values, and can wisely choose for the enrichment of his own life and that of those associated with him, those products of others—the world's geniuses, many of them—in such fields as literature, music, history, science, craftsmanship, civic service, travel, architecture, religion, and the rest.

A large proportion—but by no means all—of the beta objectives are designed to produce *appreciations*. But education toward appreciation is a very different, and perhaps, in most instances, a very much simpler, matter than is education in powers of execution or performance. Certainly it is easier to educate most of us to recognize and to enjoy good dressmaking, dramatic performance, public speaking, sculpture, or gardening than to make of us good professional performers in these several fields.

Powers of amateur performance are frequently, of course, the objectives of developmental education in sports, amateur arts, and some cultural lines. If these lead to permanent avocational interests and activities they constitute a valuable part of "education for leisure." Commonly they do not do so, however. But in that case they do produce valuable appreciations. For a growing boy a little hunting, fishing, gardening, printing, electrical work, exploration, woodworking, photography, and scores of other arts are valuable as contributions to developmental education. They produce experiences, tastes, appreciations.

SUGGESTED DIFFERENTIATION OF DISSIMILAR OBJECTIVES IN SCHOOLS[2]

A. *For Age Groups Four to Six.* All ordinary school objectives should be considered as developmental, compensatory to deficiencies in developmental environment.

Certain *home educational* objectives—dressing, cleaning, social behavior, property recognition, etc.—are partly of projective training order. Schools may coöperate in furthering these under exceptional conditions of deficiency.

B. *For Age Groups Six to Nine.* Apart from rest and sleep, about thirty-six hundred hours a year are available for active growth, development, instruction, and training of these learners. Of these hours, favored school systems now take from 700 to 1000. Historic schools hold as "hard" or "alpha" objectives oral reading, silent reading, spelling, handwriting, number, and certain phases of school behavior. Home education, not always consistently, trains in certain forms of behavior, dressing, and household service. But major portions of home time are spent in developmental activities—speech, companionship, exploration, games, competitions, expansion of likes and dislikes, and variety of simple arts.

Present recommended reorganizations: (*a*) Reduce school time to two or three hours daily if home environment is favorable. Extend school time to eight hours daily and 300 days a year, if environment is unfavorable to developmental activities. (*b*) Give not more than one hour daily at the age of six and two hours at nine to "work-level" or alpha learning; first grade, reading only; second, reading and writing; third, reading, writing, number, with spelling incidental (and approved social behavior in all grades). (*c*) In schools of good environment, beta learning is to compensate for ascertained home deficiencies, perhaps in nature study, history stories, expansion of social ideals. (*d*) In schools serving children of poor environment, a large range of beta activities is desirable; instruction in, and idealization of, hygienic practices; initiation of new games; appreciation music; stories and teacher's reading; pictures; simple tools for practical arts; interpretation of social environment, leading to community civics *appreciations;* various simple projects for general experience.

PROBLEM 1. Is it usually at all practicable for schools to accomplish

[2] These suggestions are submitted primarily to focus discussion of "comparative values" of objectives.

effective results coöperatively or otherwise in fields of: (*a*) hygienic *training* (except school-room postures, etc.), since practice must be in home and supervised play—eating, body cleansing, oral cleansing, sleep, rest, sex, etc; (*b*) regular "chore" work in household or wage-earning service; (*c*) lawful behavior in free exploratory time; (*d*) household speech, social behavior, etc.?

PROBLEM 2. Should slow children give excess time to alpha school subjects, thus lessening time for developmental subjects?

PROBLEM 3. Should bright children be encouraged and permitted to move rapidly in alpha subjects; or should they keep normal rate and be given wider range and profounder experiences in beta subjects, including physical play, practical arts, excursions, etc?

C. *For Age Groups Nine to Twelve.* Apart from sleep, these have more than 4000 hours yearly for developmental education, training, etc., of which rarely more than 1000 at the outside are claimed by schools. Exploration and several forms of intense developmental social education take place among urban children, outside of home and school environment. Present recommended reorganizations:

a. From two to three hours in school daily for alpha studies for all, for 180 days yearly, separately organized in departments of: oral speech —pronunciation, structure, etc.; silent reading; handwriting; letter writing; spelling; arithmetic; alpha geography; alpha history; school behavior. Supplemental alpha studies for election at parents' desire; oral reading; musical notation reading; drawing and painting; a foreign language.

b. From two to five additional hours, for 180 to 300 days a year, according to environment, outside work, etc., for developmental activities (the larger amounts being optional for pupils of favoring environments and in whom developmental education is taking place normally, but prescriptive for pupils unfavorably situated, or showing signs—speech, reading interests, play coöperations, social growth, hygienic practices—of inferior development). Usual beta activities will be toward wider reading, improved art appreciations, nature and science interpretations, varied practical arts, current events, physical games, information and idealization of health, beta geography and history, thrift, and scores of others. In these lines project methods should prevail as far as practicable—and in all cases great flexibility, much deferring to personal interests, and encouragement of individual initiative.

PROBLEM 1. As in earlier group, can the school do much that is effective in hygienic training, except as to school-time conditions?

PROBLEM 2. How, if at all, can school reach extra-school social behavior except through pre-cultivated appreciations and ideals?

PROBLEM 3. Will it prove practicable for the school to promote or control productive "work" activities, especially physical work, in urban environments? Are these work activities probably essential as alpha contributions to vocational, moral, health, and thrift, appreciations, powers, or other qualities?

PROBLEM 4. May it prove that substantial proportions of pupils will exhibit no genuine "developmental" interests along intellectual or esthetic lines?

PROBLEM 5. What adjustments of above should be made for pupils of inferior intelligence? Health? Moral character?

PROBLEM 6. What adjustments for children of superior intelligence? Physical powers? Moral disposition? Esthetic sensibilities? Specific powers of creative performance?

D. *For Age Groups Twelve to Fourteen.* Present recommended reorganizations:

a. Alpha studies, common for all: salient or essential history, world, American, local; salient geography; crucial civic problems.

Alpha studies *prescribed for deficients* from standards approved for (A) inferior potentialities, (B) modal potentialities, and (C) superior potentialities in: pronunciation; oral language structure; oral vocabulary; handwriting; spelling; letter writing; utilizers' arithmetic; current events; exact knowledge of hygiene; silent reading; school behavior; physical (corrective) training.

Alpha studies *elective* by persons of promising abilities: oral reading; several forms of oral and instrumental music; a foreign language; several forms of mathematics; several kinds of graphic arts; oral composition (speech making); economics and sociology.

b. Beta activities and studies of wide range, permitting much election, subject to requirement that all must give at least 300 hours yearly, and that deficients must give up to 1500 hours yearly to: physical development through sports, work (?), hygienic practice; social development, through various forms of coöperation, games, scouting; cultural development, through several forms of reading, picture appreciation, amateur handicraft, gardening, vacation travel, etc.; vocational guidance.

E. *For Age Groups Fourteen to Sixteen and Sixteen to Eighteen.* Same as for Age Group twelve to fourteen, except:

1. Pupils electing full-time vocational training, to be probably functional in wage-earning employment on completion of course, shall be

provided for through part-time arrangements for participation in productive work.

2. Curricula of liberal education shall be arranged for certain case-groups of pupils on assumption that their full-time general education will close at sixteen.

3. Preparatory courses for higher institutions shall be arranged and evaluated strictly in terms of the contributions of these courses to defined types of college work—the true ideal of "alpha" studies.

DIFFERENTIATION OF DISSIMILAR OBJECTIVES OF SUBJECTS

I. Alpha or projective studies in all ordinary school stages: handwriting; hard spelling; arithmetic; a foreign language; high-school mathematics; present high-school physics and chemistry; mechanical drawing; all purposive vocational training—stenography, carpentry, farming, dressmaking, the professions—as now found; probably other forms of vocational training to be developed—home-making, factory operative specialties, etc.

II. Beta or developmental studies and activities in all ordinary stages: physical plays and sports; general reading; moving-picture appreciation; friendly association; amateur intellectual and arts "sports"—debating, gardening, cooking, scouting, hunting, fishing, exploring, games; nature appreciation and interpretation; music appreciation; circus, dramatics, books of travel, etc.

III. Subjects now organized and presented largely on basis of alpha traditions and standards which should probably be reorganized as beta subjects; general science; hygiene; physical training (sometimes); practical arts; major portions of the content of geography and history; high-school literature; drawing (less now than formerly); and vocational guidance.

IV. In the earlier stages of these subjects, beta standards might well control for sake of apperceptive interests: arithmetic; letter writing and other composition; geography and history; civic problems; physical training (corrective).

V. Eventually certain alpha subjects should be developed in these fields: civic problems (or economic and other social science problems); problems of news interpretation; silent reading.

VI. Environmental education of household and street is largely developmental. To correct its serious shortages or malformations, alpha units may be necessary for school education in: pronunciation; correct grammar; correction of slang; posture; cleanliness; and many others.

FOR SUPPLEMENTAL READINGS AND REPORTS

BIRDSEYE, CLARENCE. *The Reorganization of Our Colleges* (Part I, Shall We Reorganize Our Colleges?).

BROWN, J. F. *The American High School* (Ch. 2 and 3, Functions and Programs).

BUTLER, N. M. *The Meaning of Education* (Ch. 2, The Meaning of Education).

HANUS, P. *Educational Aims and Educational Values.*

JOHNSON, H. *Teaching of History* (Ch. 15, Correlation of History with Other Subjects).

JOHNSTON, C. H. *The Modern High School* (Ch. 2, High-School Education as a Social Enterprise).

JUDD, C. H. *Psychology of the High-School Subjects* (Ch. 19, General Problems).

MILLER, I. E. *Education for the Needs of Life* (Ch. 2, The Meaning and the Aims of Education).

MOORE, E. C. *What Is Education?* (Ch. 10, Diagnostic Education).

ROSS, E. A. *Principles of Sociology* (Ch. 54, Principle of Anticipation).

CHAPTER V

THE OBJECTIVES OF EDUCATION—METHODS OF ANALYSIS

A. THE "CASE-GROUP" METHOD OF DERIVING VALID OBJECTIVES

INTERPRETATIONS OF EXPERIENCE

IF all children or adults were alike in their original natures, their environmental conditions, and their prospects in life, we should suggest and specify the same educational aims or objectives for all, and especially of those objectives for which schools are primarily responsible. But children and adults differ greatly in all these respects. Hence certain educational objectives might be desirable and practicable for some, and not at all for others. Would you recommend that: a child of inferior mental ability be urged to study Greek, or advanced mathematics? A person with inferior sense of rhythm be induced to try to become a musician? A boy of inferior physique try to become a coal-miner? A woman seek to become a locomotive engineer?

Possibly an ideal scheme of education would adapt its recommended or prescribed offerings to each person, according to his individual needs. But, ordinarily, that is wholly impracticable. We must provide the means of school education—desks, class rooms, books, lessons, problems, examinations, time-tables—as well as many forms of extra-school education—newspapers, books, lectures, vocational training—for groups of persons who are selected on the basis of being as nearly alike as practicable in their abilities and needs. Schools as well as some other educational agencies—including armies, shops, ships, churches, and guilds—have in fact always been more or less guided by abilities and needs of selected groups in their educational work. But in much of the literature of education, and especially that which deals largely with aspirations and ideals, there persists a troublesome carelessness or disregard of the large variabilities among those for whom schools, curricula, courses, lessons, and educational equipment must be designed.

Scientific determination of desirable and practicable objectives for many forms of education can be devised only in the light of fairly definite assumptions or findings of fact as to the potentialities of what will for convenience be here called "case-groups." Recalling your own experiences, what answers will you submit to these questions:

1. In a certain large city high-school first-year class are 100 boys (Case-Group A), all of whom conform substantially to this description: they are of

considerably more than average ability, come from prosperous homes, have good health and moral character, and are of American ancestry.

In the same school first-year class is another 100 boys (Case-Group B) who conform generally to this description: they are of less than average intelligence, they come from relatively poor home environments, and are hardly satisfactory in moral behavior.

a. Will many Case A boys probably go to college? Case B boys?

b. What vocations will chiefly attract Case A boys? Could Case B boys probably enter these vocations if they desired? What vocations will Case B boys probably enter?

c. From which group, probably, will more political leaders emerge?

d. Granting that the schools do the best they can, what will probably be the persistent reading interests, at age forty, of the survivors of the two groups respectively?

e. If one fifth of all school time during the first year could be devoted to health or physical education, should any differences of offerings be made for these two groups?

2. In a large elementary school in a city are 100 girls thirteen years of age (Case-Group C) who are: two or more grades retarded, of less than average mental ability, and from poor home environments. Does it seem to you probable that any considerable numbers of these girls:

a. Will go to college or normal school?

b. Will not enter upon wage-earning callings?

c. Will not marry and have homes of their own?

d. Will remain in school long beyond the period of compulsory attendance?

What bearings should these considerations have on the prescriptions or offerings of this school (or other public schools) for them? Would it seem advisable to urge them: to study French; home economics; to become proficient in basketball; to learn some branch of a factory pursuit or salesmanship —what, for example?

3. In a large city high school it is found that among 400 pupils entering, from 50 to 60 answer substantially to this description: they made hardly more than "passing" grades in elementary school subjects; mental tests show that they are below the average of intelligence; their parents are manual workers with rather meager resources; and it seems very unlikely that these pupils will remain in high school more than one or two years. What, in your estimation, should the high school seek to accomplish for these pupils? Should the faculty urge them to take Latin? Manual training? Ancient history? Hygiene? French? Should it seek to teach them a trade—*e.g.*, carpentry? Can this trade be taught in a high school? Given a free hand, what kind of a two years' course would you plan for these pupils? Separately consider possible offerings of physical training, literature, civics, current events, music, stenography, general science, and other subjects. Would you provide studies

primarily to help these children themselves, or to make them better members of societies—and of what societies especially?

4. You are told that a certain 1000 persons answer this description: they have immigrated to America within the last three years from cities in southern Italy; they are men from twenty-five to forty years of age. What predictions can you make as to what will probably be, for the large majority: places of residence—urban, rural, Eastern state, Southern state; occupations entered; interests in education of their children; desires to become Americanized; abilities to save money?

5. In a certain city of 200,000 population, 100 home-makers are taken at random from each of two widely separated social classes. Both sets are American born, and from thirty-five to forty years of age. The family income of Set A is from $5000 to $8000 a year, of set B from $1400 to $1800. Knowing only these facts, answer these questions: What will be the prevailing size of the home of the members of each set? The prevailing size of the family? The usual home-making duties? The occupations of their husbands?

6. The following facts are known regarding 100 young men aged twenty-two to twenty-four: they have just graduated from liberal arts colleges in Eastern states, having had sufficient parental backing so that they did not have "to work their way through." You are asked to infer generally true conclusions under these heads: What will be their prevailing tastes in clothes? The vocations to which they will mostly aspire? The probable character of their civic performance at age forty? Their present health, and their probable health at age fifty?

THE CASE-GROUP METHOD OF APPROACH TO THE STUDY OF EDUCATIONAL OBJECTIVES

Mankind is composed of individuals who vary widely in many respects.[1] Some are very young, some are very old. Some are large of body, some small. Some are black in color, some white. A few are born very "long" in mental powers, a few very "short." Some seem strongly endowed with musical abilities, some seem to be "music-deaf."

Habitat and social conditions of parents and others constitute also important differences. Of two boys, born on the same day, one to a poor native mother in Afghanistan and another to a prosperous farmer in Minnesota, the subsequent life histories are practically certain to be immensely different, because of differences in their environments.

Because of these diversities, the sweeping characterizations in which mystical or superficial social thinkers like to indulge fail very largely

[1] The rich psychological literature on "mental testing" will be consulted by the interested student. The Great War gave a splendid impetus to researches in this field. See Yoakum and Yerkes, *Army Mental Tests.*

to correspond to realities. "Women are less intelligent than men"; "the French are more artistic than the Germans"; "farmers are more conservative than city peoples"; "the Irish are a political race"; "the Oriental is phlegmatic and a fatalist"—these, and numberless other generalizations like them, are of slight service either to descriptive, or to applied, sociology.

They are especially unsatisfactory as foundations whereon to erect policies of education or other social action. Not a little educational writing centers about that abstraction "the child." Contemporary psychology renders more scientific the knowledge that men have always had as to the wide ranges of the basic intelligence of children. Some are born with large endowments—certainly of general, and possibly of particular, kinds, as these manifest themselves in action. "The child" may be black or white, of frail body or excellent health, of much natural courage or timidity. He may be the offspring of poor and dissolute parents who will at best create a poor growth environment about him; or else he may arrive in a home of thrift, strong moral control, and excellent social aspirations.

Formerly this question was much debated: "Should girls have the same education as boys?" A distinguished educator put a permanent quietus upon these debates by the simple device of asking, "Which boys?" Some boys need or can take one kind of education; whilst some other boys need or can take a quite different kind. Similarly, no one kind of education, beyond the most elemental stages, can be imposed as "right" for all girls. Should the negro have the same education as the white? Which kind of negro, and which kind of white? Booker Washington once mildly rebuked certain critics for their tendency, in comparing blacks and whites, to compare "the worst negro" with "the best white man." He quizzically recommended a reversal of this practice as salutary to moral wholesomeness—that is, a comparison of the worst white man with the best negro.

Easy sociological generalizations can in a degree be avoided through use of the case-group method. This in essence consists in the isolation for scientific study of groups of human beings fairly homogeneous as respects one or several qualities. Practically, we are constantly taking action with reference to case-groups, even though the sociological applications are often obscured. An employer, having certain work in view, chooses his workers with quite definite reference to their possession of certain qualities in expected degrees. Classes in schools are formed as far as practicable so as to produce homogeneity of age, ability, and the like. Shoes, bicycles, school desks, and many kitchen utensils are made in standard sizes essentially to meet case-group requirements. Golf clubs

are made in rights and lefts. In Boston a large proportion of readers of newspapers could not read newspaper A (with any freedom or satisfaction) if they would; whilst a very influential minority, greatly enjoying newspaper A, would not read newspaper B. For some purposes these two groups of readers could be studied as case-groups.

Case-groups may be differentiated by a succession of qualities. It is hard to generalize with any success about the six million or more human beings living in New York City. They consist of male and female, all ages, all nationalities, all economic levels, many religious faiths, and all ability levels. But we might make some useful applications of knowledge of the prevailing characteristics of (*a*) those residents of New York, (*b*) men (*c*) between thirty-five and forty-five years of age who (*d*) are American born and (*e*) who follow manual (*f*) semi-skilled vocations.

We are all prone to generalize about "the farmer"—of whom there are perhaps eight million in the United States. But (Case M) farmers of "American stock," living in Iowa, and owning, free of mortgage, at ages forty to forty-five, from forty to fifty thousand dollars' worth of property, are widely different in many essentials from farmers (Case N) who were born in Poland and who at age fifty are doing some general farming on rented tracts of rather poor land in southern New Hampshire.

Is there a "type" seventh-grade pupil for whom curricula should be designed? We know that seventh-grade pupils vary greatly in abilities, home conditions, future prospects. Let us divide 500 seventh-grade pupils in a city school, first into two classes, A (all above the average in intelligence as tested by any convenient standard) and B (all below the average). Let us now divide each of these classes in two groups according as their fathers earn more than three thousand dollars a year (M group) or less (N group).

What are some easily predictable probable future conditions of the AM group? The BN group? Less easy, perhaps, is it to make useful prognoses of the AN and the BM groups. But we must remember that, in the last analysis, all school curricula are built on expectations.

B. PROBLEMS OF THE "FUNCTIONING" OF EDUCATION

INTERPRETATIONS OF EXPERIENCE

Education being one of the important means of individual and social efficiency must, in the last analysis, be judged and evaluated, as to purpose and method, in terms of its products. What are these? Obviously,

modifications in the behavior of persons. And, ordinarily, it is to the behavior of adults that we should look for our best tests of results.

Some of these products are easily determinable. If we wish to train children to read, we evaluate our results in terms of adult literacy. But it is as impossible to discern in adult qualities the surviving products of their child-time games of marbles as it is to discern the projected effects of their child-time breakfasts. The outcomes of the study of French in high school we should perhaps be able to measure at age thirty; but far less tangible are the effects on better civism of the history or civic studies pursued at the same time.

Clearly, there can be no scientific determination of educational objectives that does not, as far as practicable, seek to study products, outcomes, or functionings of such education. Your own personal experience is a good starting point here:

1. What powers and appreciations in yourself do you trace directly to school education—reading and writing, literary interests, reading knowledge of a foreign language, vocational powers, health ideals, and habits, musical interests, civic attitudes, etc.?

Which do you trace primarily to extra-school education and influences brought to bear through the school? Which to home, church, and neighborhood influences unconnected with the schools?

Analyze the qualities of representatives of these fields of work known to you: a farmer; a business leader; a partially unsuccessful professional man; a home-maker with a large family; and a casual laborer. In each case endeavor to trace to their (*a*) schools, (*b*) school environment, and (*c*) non-school environments respectively their distinctive "acquired" qualities.

2. It is proposed to establish a school to train house carpenters—taking boys at eighteen years of age. But the "content" of this vocation is not clearly defined. Show how "job analysis" of adults now working at the trade could be used to determine this. If it is found that employers rate certain carpenters "excellent," others "good," others "fair," still others "poor," and a fifth group as "failures," which group would you study to get sound criteria of workmanship in training for the vocation? How would you make proper discount for the "natural" genius of the "excellent"?

3. Take five persons known to you whose ages are not greatly different from your own. Rate them, as far as you know them, on an A, B, C, D, E scale (C, fair or average) in these matters:

a. General health.
b. Vocational health—that is, by the standards required for their vocation.
c. Physical development.
d. Hygienic and sanitary practices.
e. Health ideals, active.
f. Recreational participations.
g. Physical training.

To what extent do their acquired qualities in these directions derive from school education? From other sources that can be identified?

4. What, in your estimation, are evidences of a "cultivated mind"? Define the qualities found in some persons known to you which justifies their being called intellectually and esthetically cultivated or cultured. Would such qualities, as you see it, invariably include interests in: literature? Music? Graphic art? Science? Nature, as the naturalists see it? Remote history? Contemporary history? Human fellowship and manners?

Have you known manual workers who were "cultured people"? Women, home-makers with large families? Farmers? Have you known professional men or women who were really not "cultured"?

Trace the origins of the culture of some persons to youth (*a*) in schools, (*b*) in school associations, and (*c*) in non-school agencies?

5. What are distinguishable social qualities, as you see them, in men of "good" civic and moral behavior? Trace probable origins of these qualities in certain persons known to you. Of which has the home given more than the school? The trade union more than the church? The neighborhood social environment more than the home? What have been specific contributions of the schools?

In your estimation, does "moral character" "correlate closely" (or vary proportionately) with: native intelligence; amount of school education; wealth? How did the "moral character" of the Boys of '76 probably compare with that of the Boys of 1917? How did the "civism" (good citizenship in the political sense) of the New England and North Mississippi Valley young men of 1861 who gave themselves freely in the Civil War probably compare with that of the relatively far more literate men of 1917?

If you were proposing a scheme of civic education for junior and senior high schools to-day, from what classes of adults in the community would you derive your standards of "desirable and practicable" civic conduct? By these standards, are you a good civic member of society?

THE SOCIAL FUNCTIONING OF THE SCHOOL SUBJECTS

The social inheritance of knowledge, skill, appreciation, etc., takes the form in part of subjects of study in school and college. We give these class, as well as individual, names, *e. g.*, handwriting, Spanish, ancient history, biology. Some of the subjects, such as English language, can be differentiated into a variety of sub-species, such as pronunciation, punctuation, vocabulary building, and the like.

By "social functioning of subjects" is meant the use in society, or in important parts of it, of the subject as it may be taught or studied. We

think of handwriting and simple spelling as being universally helpful to literate peoples. It seems important to us that at least a limited number of persons in the state or nation should be able to read Spanish, to speak it, or to interpret and translate Spanish literature. By general consent, all pupils in our schools should be taught some essentials of hygiene, and beyond this more or additional hygiene should be taught to the followers of particular vocations, and to those living under particular conditions.

Study of the problems of social functioning of school subjects involves certain methods of approach:

a. What is the character, scope, and content of the subject?

b. Why should it be taught to any one? To what ends or purposes should it be taught?

c. To whom should it be taught?

d. Where procure the necessary time, resources, teaching power, and other means of teaching it?

e. When should it be taught?

f. How teach it?

Problems of objectives will be of various kinds:

a. There are certain established subjects as to which no one disputes the validity of the historic aims. For example, silent reading, handwriting, simple arithmetic, hygiene. Present-day problems are here chiefly as to the optimum standards of achievement that should be sought. The number of subjects that could be taught in every large school to-day far exceeds the time and learning energy of pupils. Therefore we must find minimum essentials in the subjects named above. What, for persons of a given case-group, constitutes minimum optimum achievement in each of these subjects? Problems of aim here are still acute, obviously.

b. In other cases no one disputes the value of the subject, but important problems of aim center in the selection of learners. No person probably seriously disputes that some American youth should be given opportunity, or should be induced even, to study Greek, Latin, quantitative chemistry, Chinese history, or Aztec inscriptions somewhere in school or college. Many persons dispute the advisability of prescribing any one of these subjects for many students; or even of providing them at considerable expense for large numbers of students who may desire to take them.

c. In still other cases, problems of aim center chiefly in the organization of subject matter itself. All are agreed that our schools should do something in the way of teaching civism, thrift, appreciation of mathe-

matics, current events, and the like. There exists, however, altogether insufficient knowledge of specific objectives to facilitate the organization of means and methods.

In the case of any given subject it will frequently happen that more than one aim can be realized through its study. Educators often create confusion by allowing the assumption to prevail that two or more aims may be of equal importance. In the very nature of the case, this can not be so. One primary aim only can, as a rule, control in the organization of the means and methods of teaching the subject. All other aims must be incidental or subordinate to this. Hence it is essential, in discussing the sociological foundations of any subject, that first attention be given to the primary aim that should control in its teaching, after which it becomes possible to speak of various secondary aims or objectives that can be realized as by-products.

C. CLASSIFICATIONS OF EDUCATIONAL OBJECTIVES

INTERPRETATIONS OF EXPERIENCE

Practical life, as well as science, finds classifications, categories, differentiations, and groupings indispensable to any progress in thinking, discussion, and formulation. The reader will find himself already long habituated to some of these provisional classifications. For example:

1. What do you understand by: high-school or academic subjects; college admission subjects; cultural studies? What are the "professional studies" employed in the training of teachers?
2. What studies, as you understand it, are included in, and what excluded from: the classics; the humanities; the practical arts; the social sciences; the fine arts?
3. What specific kinds of education seem to you best to contribute to: mental training; moral training; education for citizenship; education for leisure; education for "parenthood"; education for "business"; education for homemaking?
4. Should Greek, in your estimation, be studied by: prospective homemakers? Voters? Ladies of leisure? Ministers? Why, in each case?
5. What distinctions seem to you valid between "general" and vocational education? Between physical and cultural education?

VARIETIES OF OBJECTIVES

As previously stated, the specific objectives of education are indefinitely numerous. It becomes indispensable to discussion, and to other treat-

ments of them, that they be classified into groups by virtue of some kind of resemblances or differences. Without pressing the analogy too far, we can think of these objectives or specific purposes as falling, like plants and animals, into genera, species, varieties, and the like.

Such phrases as "the three r's," "academic studies," "the school arts," and "the liberal arts" are familiar. The "humanities" or "humanistic studies" and the "classics" are old designations still frequently employed. Many other more or less convenient groupings are often used; for example: the sciences; modern languages; industrial arts; athletics or sports; the mathematical branches; the fine arts.

Less familiar, in some respects, are the "source groupings" of educational activities frequently employed in early pages of this book, such as education of the home, the church, the shop (in a very generic sense covering all vocational participation), the school, the press, the stage, the library, the club, and playground, the police powers, and others.

Philosophy and the psychology of a generation ago popularized classifications of educational purposes based upon the human parts or qualities primarily affected. This developed such categories as intellectual, physical, moral, and even spiritual education; whilst not uncommonly, also, such terms as education of the emotions, of the will, of the sentiments, and of the feelings were found serviceable. Derived terms such as mental training, manual training, and physical culture have likewise been much used.

The foregoing categories are not, properly, in many instances, classifications of objectives, so much as they are classifications of subjects of study and means of education, or of the personal qualities to be modified. The terms "modern languages" and "humanities" only vaguely imply the objectives actually expected to be realized through them. "Manual training" and "intellectual education" obviously suggest processes rather than ends.

In recent years some efforts have been made to classify educational processes in terms of their expected outcomes. Since education has evolved no scientific terminology of its own, and must therefore draw upon the vernacular for most of its terms, the classifications employed are often indeterminate and misleading. Their use frequently produces a pedantic jargon which seriously antagonizes intelligent laymen; nevertheless, no other course now seems open.

The Commission on the Reorganization of Secondary Education classifies all the desirable objectives of school education under seven principal heads: physical education, vocational education, education for

citizenship, education for good family membership, ethical training, education for leisure, and training in fundamental processes. All but two of these are quite obviously based upon ends to be served in society; and even the categories "ethical training" and "training in fundamental processes" imply such ends.

Major classifications of objectives should be based upon ends expected to be realized—that seems the proper principle to be accepted on behalf of educational sociology. All forms of education are processes or means —to what specific ends of growth, training, power? These should be determining, first of all. Within the categories thus established, other classifications can be developed. For many purposes, it is convenient and important to subclassify objectives by customary and practicable sources—home education, school education, and the like—as given above. Another cross-classification that seems of great importance because of its bearings upon method is that already suggested between projective and developmental objectives (where purpose is held in view) or between play-level and work-level objectives (where method is chiefly under consideration). (It is recognized, of course, that these are not always *corresponding* classifications; nevertheless, it will be found that they serve well for practical purposes—which must be the justification of making classifications that do not pretend to complete scientific accuracy.) It is evident that, whereas classifications based either upon ends to be served or sources are classifications of *kinds,* the distinctions between alpha and beta objectives are apt to be in *degree* only, and hence, like differences between hot and cold, large and small, involve frequent "twilight zones" where well defined differences can hardly be found.

Social needs to be met give us our first and major basis of classification. What are these? Obviously, all social needs must be met by and through individuals. All societies expect these, in greater or less degree, to be: (*a*) healthy, strong, and physically enduring; (*b*) competent and industrious in vocation (which includes warlike defense and aggression); (*c*) friendly, coöperative, and dutiful toward other human beings and toward deities; and (*d*) possessed of good tastes and suitable knowledge as part of personal grace and culture.

FUNDAMENTAL CATEGORIES

These four grouping of desirable human attributes, expected especially in adults, suggest these as useful primary classifications of educational objectives:

a. **Physical Education,** to include all those controls of growth, training, and instruction, the determining purpose of which is to promote some form of health, bodily strength, bodily grace, or longevity.

b. **Vocational Education,** to include all those controls of growth in experience, training, and instruction which are designed primarily to make the individual an effective worker in some one of the world's numerous forms of productive industry, defense, or other service.

c. **Social Education,** to include all those controls of growth, and forms of moral, civic, or religious training and instruction, designed to make of the individual a good associate or federate, as friend, parent, citizen, coöperator, or in other social relationship toward man or God.

d. **Cultural Education,** to include all those controls of growth, training, and instruction designed primarily to extend individual knowledge and appreciation in desirable directions not imposed by physical, vocational, or social needs.

The primary purposes of specific educational processes may in some cases be difficult to determine, since important secondary purposes may, by customary valuation, appear to stand in the foreground. Some examples of these difficulties should have consideration here.

In a third school grade a teacher undertakes to teach a nine-year-old boy: (*a*) that malaria is caused by germs conveyed by the bite of a certain kind of mosquito; (*b*) that lying is objectionable and intolerable to decent people; and (*c*) that "King Philip's War" was one of the severest of the struggles to which the early settlers of New England were subject in their conquest of that region from the Indians. It would hardly be disputed that the purposes of these three specific educational aims fall respectively under the three heads of physical, social, and cultural education.

What is, or should be, the primary purpose of school calisthenics? Of "social geography"? Of stenography in a commercial department? Of the study of Roman history? Here, again, classifications are probably not difficult.

But there are other subjects in which difficulties abound. What is, or should be, the primary purposes in teaching children handwriting, and its applications in composition? Such powers may incidentally contribute to physical well-being. Some vocations—not a very great number, probably—present special necessities for good, speedy, or beautiful handwriting or written composition. Friendly intercourse and effective discharge of civic responsibilities are sometimes best accomplished through written communication.

The common judgment, however, is that the man who can not write is seriously defective as respects the common culture that all civilized men should possess. A good instance of this is found in popular prejudices against defective spelling, which is, of course, simply a branch of "writing." Fundamental objections to poor spelling are based, not upon convictions that these contribute to poor health, poor compliance with law, or with lack of vocational success,—except in some half-dozen callings,—but upon prevailing standards of taste and appreciation.

Again, what is the primary educational purpose to be served by "manual training"—or, let us say, a special branch of it like wood-working—for boys thirteen years old? It used to be assumed that the primary purpose was, or could be, vocational; but that notion is now generally discarded. Obviously, there are incidental health and social gains that can be made to accrue through it, but none of sufficient magnitude to indicate a primary function.

Best informed opinion now finds the chief justification for abundant industrial and other practical arts opportunities for growing boys among the cultural objectives of education. Like travel, general reading, and photodrama, practical arts participation enriches experiences, extends appreciations, and develops the tests and interests that endow the broad and deep personal life.

There are, of course, some forms of developmental education, as well as of training, the results of which apply generally. The child learns the vernacular speech to the ends of vocational, social, and cultural proficiency. Literacy has been at different times chiefly valued for vocational, religious, civic, and cultural ends. Up to the level "called for by the demands of an appropriate common culture," we may be assured now that reasonable literacy serves also vocational and civic ends.

Outside the simple school arts, and certain basic forms of natural learning like speech, it is of the utmost importance, as will be shown later, that the actual objectives of any particular form of education be accurately determined. Unless this be done, methods will almost certainly be poor and results indeterminate. To what end, primarily, for example, should Spanish be studied in a public high school? Civic, vocational, or cultural? We must know, in order to set right goals and choose right methods. It is sometimes claimed that the "social purpose" should govern in physical sports, just as it is sometimes claimed, on the other hand, that the ends of physical training should govern in so-called military training in schools. Possibly these are both absurd contentions; but how can that absurdity be demonstrated? Some persons justify

public support of vocational schools primarily on grounds of their contributions to civism; but is that not putting the cart before the horse?

ACCESSORY CLASSIFICATIONS

Attention will later be given to a variety of less important, but often serviceable, classifications of objectives, of which some, like the foregoing, are based upon perception of social needs to be met. Reference need be made here only to a few of them.

Education for leisure, one of the large categories of the Commission on the Reorganization of Secondary Education, obviously focuses attention upon an important need in modern life. It suggests special education for avocations, hobbies, and travel, and the elevation of tastes in reading, music, and nature study. Likewise it points the way to certain useful outcomes in adult life of early habituation to outdoor recreations and indoor social diversions.

Distinctions can often be profitably made, as noted before, between those objectives of education that involve as their worth-while outcomes powers of *execution, performance,* or *doing* (as handwriting, spelling, silent reading, trigonometry, or a trade), and those others the values of which are found in developed *appreciations* (as appreciations of music, literature, nature, or science). To a substantial extent, this differentiation parallels another serviceable one between education for (superior) utilization, and education for production (since *all* persons utilize music, poetry, newspapers, furniture, and medical service, whilst only a few produce each kind of such service).

FOR SUPPLEMENTAL READINGS AND REPORTS

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CHAPTER VI

THE EVOLUTION OF EDUCATION

THE history of education describes and interprets the particular events, stages, processes, and controlling purposes, including ideals, that have taken place or operated in particular periods and places.[1] Educational sociology is chiefly concerned with the *generic* facts and sociological principles and laws revealed in such study of past events.

In analyzing education and its factors as a major social process in preceding chapters, it has been frequently informative and helpful to refer to educative processes found among primitive or earlier historic peoples. It is therefore neither necessary nor expedient to introduce here any considerable account of the evolution of education. For the scientific student of education such a study, if it could now be written, would doubtless be of fascinating interest, as is the history of medicine to the physician, and the history of mining, metallurgy, war, and transportation to specialists in those fields. But it is not clear that such study would possess other than cultural significance. It is probable that the story of the evolution of education would possess little more scientific value to modern educational practice than would the history of medicine to the modern student of that subject.

The following paragraphs, in part summarizing previously given details, are submitted primarily for the purpose of bringing into relief certain interpretations not heretofore emphasized.

The sociological foundations of education rest on these basic facts: (*a*) the young of the human species is, in a biological sense, exceptionally "teachable"—that is, owing to its prolonged infancy, its large equipment of "instincts to learn," and its powers of speech and abstract thinking, it can learn more from experience, and especially from training, than can other organic beings; (*b*) the "elders" in any given group—and this includes even the slightly older or more experienced among children—are

[1] See P. Monroe, *Textbook in the History of Education,* for descriptive and interpretive survey of the stages and events in the evolution of various forms of education. Each chapter is followed by bibliography.

instinctively teachers—that is, they find great satisfaction in inducing, even compelling, the younger or less experienced to learn at least some of the forms of behavior, varieties of skill, and facts of knowledge that the elders possess (but under some circumstances this attitude is reversed and elders seek to prevent youngers from learning); and (*c*) the experience, discoveries, forms of behavior, and skills gradually acquired, are, among humans, transmitted as the social inheritance.[2]

Primitive social groups, having none of those specialized agencies that we call schools, nevertheless exhibit numberless varieties of education carried by parents, warriors, priests, wise men, and others.

But many kinds of non-school education can also be observed in any family of to-day. In every home small children acquire speech, manners, simple moral standards, and a variety of skills—use of table utensils, dressing, washing. The boy on the small frontier farm easily learns to participate in the hundred elemental productive occupations—plowing, milking, ditching, horseshoeing, housebuilding, camp cooking—there carried on. In every home the children acquire from their parents a large variety of likes and dislikes, of ideals or aspirations, and of attitudes of repugnance for other persons or for other standards than their own.

Many of the methods of primitive education can easily be observed also in the play life of children. In villages, and among the less exclusive of our city peoples, boys and girls beyond the ages of eight to ten mingle much with their fellows and thus create social groups of juniors. These groups, as every observant teacher sees and as every sensitive parent keenly feels, have forms of approved speech, behavior, and ideals that often clash with those approved by some, or occasionally all, home standards.[3]

Primitive education is, except for the ceremonial of initiation, largely a by-product of adult activities, vocational, cultural, and social. Because nearly all forms of family, clan, or horde life are simple and very accessible to the senses of the growing child, he constantly learns by observation, imitation, and incipient helping. Where men and women habitually foregathered separately for work or social intercourse, the younger children naturally associated chiefly with women. But sociologists have probably not yet done justice to the conditions under which those ancestors of civilized peoples who lived hundreds of centuries in the colder parts of

[2] Letourneau, *L'Évolution de l'Éducation,* comes nearest, among available books, to being a sociological interpretation.

[3] Consult K. Groos, *The Play of Man,* and J. Lee, *Play in Education.*

the north temperate zone developed their by-education. The long nights of winter and the climate certainly necessitated the spending of many hours in family groups around firesides during which minor games, music, and drama may have served somewhat for diversion, but where almost certainly the oft-repeated tale, story, or song must have been the choice means of whiling away time. The cultural values of this fireside education during the long ages of illiteracy can not now, of course, be fully evaluated. When some of these people became conquerors—in Greece, Italy, and everywhere in Europe during the early Christian centuries—the prestige and wealth of the leaders enabled them to demand *specialists* for their enlarged feasts and firesides. So the ancient processes culminated in the professional tellers of heroic tales, singers of heroic songs, and historians of tradition—bards and the like.

In many parts of the world the *initiation* served important educational ends. It was a kind of combination of *final examination* and commencement, and was, very probably, often associated with a *transition* in the educational direction and control of the youth. At any rate, it is clear that in many primitive societies boys were required to undergo severe tests in order to demonstrate their fitness for the active life of hunter or warrior. While this was in fact a kind of vocational transition, it was natural also to think of it as a transition from youth to manhood.

The early stages of direct education have not yet been described for us in scientific fashion.[4] Early records tell of several varieties that seem to have become elaborately evolved from earlier beginnings. It is possible that priesthoods very early began to train novitiates in their practices of magic. Initiations into adult responsibilities doubtless always suggested the specialization of teachers of legend or specific behavior. Certainly some of the ancient crafts—metal working, pottery, building with stone—developed systematic apprenticeship education.

But we have more information about military training in early history than about other forms. Records of the past now available were largely produced under conditions of second- or third-degree conquest—that is, of enslavement or of enserfdom. This forced the development of professional military and governing classes, among whom the training of the young was frequently placed in the charge of specialists who could give needed time and attention.

The early Persian, Spartan, Athenian, Roman, and Teutonic schooling was, in fact, specialized for ruling classes.

[4] But see Letourneau, *L'Évolution de l'Éducation;* A. J. Todd, *The Primitive Family as an Educational Agency;* and Starr, *First Step in Human Progress.*

THE SOCIALIZATION OF EDUCATION [5]

The school, like the family, the church, the guild, and the party, has always been a *social institution;* that is, it has sprung from needs of group mechanisms, and has been expected in turn to reinforce group life. But, like those other institutions, schools have often been imperfectly socialized. They have served partizan groups rather than whole groups, have been used to accentuate cleavages rather than to unite factions, and have intensified destructive competition and exploitation rather than enhanced large coöperations and democratic equalizations.

It is a mistake to assume, as do many contemporary writers, that the schools of the past have been excessively individualistic. Certainly the schools of aristocratic families, or of strongly self-centered religious denominations, have not been that. True, their immediate and most visible aim was the strong individual—strong in arms, in martial virtues, in religious faiths, in classical learning, in mastery of science and art. But these forms of strength were, less immediately considered, always to redound to the strengthening of the castle, province, church, family, culture class, or other sect that used this education as a means. In no true sociological sense can the form of education so vigorously promoted by Spartan or Persian, by guild of knights or guild of goldsmiths, by New England Protestant or French Jesuit, by Chinese state examinations or British boarding schools, by Mississippi Valley settlers or cotton-growing aristocrats, be characterized as individualistic. On the contrary, they have been most intensely social—but social for a "small group"—a partial group rather than the whole. Prussian education of 1800-1918 was certainly the reverse of individualistic; but, from the standpoint of international relations, it, too, was excessively "packish,"—that is, of and for the "small group,"—even though in this case it was a group of forty million.

Schools fostered by Christian denominations have at times, like Christian teaching itself, been "human" or social in the largest sense. But, commonly, "mankind" has been too numerous and too diversified to make possible for long a real focusing of altruistic vision. Even very good Christians often relapse into thinking of men as Greek and barbarian, elect and non-elect, faithful and pagan.

Public schools, at their best, have been nationalistic schools—that is,

[5] See Smith, *Educational Sociology* (Part II, Educational Applications); and I. King, *Social Aspects of Education* (Ch. 11).

designed to uphold and advance the state in its then cherished form of organization—here an oligarchy crowned by the "divine right of kings," there a republic founded on the assumption *vox populi vox Dei est.*

What then, is the significance of the twentieth-century movement toward the *socialization* of education? This movement in reality is compounded of many factors, some affecting the *aims* and some the *methods* of the schools.

Education can be made more social in *aims* when it seeks to evoke, inculcate, or strengthen the social virtues, and especially those not well provided for by extra-school agencies—home, church, vocation, etc.

Organized education, in large numbers of earlier and medieval societies, was carried on by what may generally be designated as guilds—including under that term *all occupational differentiations of societies which seek hereditary transmission of their vocations, or, like religious guilds, take charge of the education of the recruits.*

Throughout the Middle Ages in Europe, military, religious, professional, craft, and trade guilds developed respectively the systems of education deemed best for their heirs and recruits. Naturally, what we should now characterize as vocational objectives predominated in this education. The boy of noble birth was long and carefully educated to be a knight, with all that such a calling implied of physical, moral, and cultural powers and appreciations. The son of the merchant or the boy apprenticed to the merchant likewise spent years in learning his profession.

Apprenticeship in the trades began early, continued long, and was buttressed by a multitude of laws and customs. In some respects the processes by which to-day a boy with a "vocation" becomes a Catholic priest are reminiscent even in details of the processes that prevailed in the same field of work a thousand years ago. Apprenticeship, possibly of a somewhat degenerated sort, survived well into the nineteenth century in law and medicine in the United States and in public-school teaching in England. Even yet the guilds of law and medicine in England exercise much influence over education and standards in those callings. The continuation schools of certain German states owe their origins largely to the efforts of the modern representatives of industrial and commercial production to discharge their ancient guild responsibilities.

Thus the processes and methods of guild education have probably been almost universal in certain stages of social evolution. Only in advanced forms of "nationalistic" evolution can the state supersede corporate and private endeavor in so complex a function.

DIFFERENTIATION WITHIN CURRICULA

The historic school was conceived only as a place of artificial learning. Its purposes or aims were essentially projective. It tolerated but did not welcome developmental activities at recesses, out-of-school hours, and in certain festive seasons. It even helped organize sports because they permitted "escape of steam" which would otherwise blow off in class time.

Then came the great innovators. They saw the desirability of using schools as means of promoting even natural learning—especially in the cases of orphaned children, babies from poor homes, boys and girls from crowded urban environments. Outside the school, children grow intellectually from contact with and experience in manipulating "objects." Why not effect learning in schools through realistic "objects"? As plants grow naturally in a sunny garden with good soil, why should not children grow bodily and spiritually in a children's garden made sunny and fertile by warm-hearted teachers and tempting equipment? Should not education culminate in the establishment of permanent "interests," and should not, therefore, its processes be interesting? Life's activities, spontaneously and gladly entered upon, are obviously educative; could they not be made much more so by being organized in the schools, with as little "denaturing" as possible? The world organizes its enterprises as projects; why not organize learning around educative projects akin to those in the extra-school world which are so naturally educative? Thus evolved the ideals, doctrines, and experiments of men like Comenius, Pestalozzi, Froebel, Herbart, Dewey, and a host of others.

Contemporary schools reflect, naturally, all sorts of survivals and many sorts of aspirations from this historic past. The spirit and aims of the kindergarten have greatly affected the primary school. The best elementary and secondary schools have gradually learned to approve and to include in their curricula activities, if not studies, of steadily lessening formalistic character. Modern schools, at their best, are something much more than prisons for enforced labor on the part of children. Play in its various species—physical, social, intellectual, solitary, coöperative, even competitive—is not now suspected by teachers as it once was.

But the recent evolution of subjects and curricula has greatly complicated the problem of teachers and other educators. An old question is incessantly revived, and with added insistence that helpful answers be found: What is the aim of education? In other words: What are the

schools really expected to accomplish? How shall their total task, their several specific tasks, and their work from day to day be defined, measured, and ordered?

As elsewhere pointed out, educators are now less certain of their aims even than they were in former years—less certain, of course, because more critical, less reliant upon belief and dogma. They are also confused as to methods. It is hard to escape the conviction that the processes which fit plastic human nature, with its tremendous biological inheritance hardly altered from the days of naked savagery in the wilderness, must involve much *discipline, drill, hard training, strict enforcement of rule,* and *steady habituation to work,* if the needs of civilized society are to be served. On the other hand are the multiplying proponents of the *rights of children to childhood*—that is, to the *natural* growth, the *unforced development,* the *self-realization* that their original nature makes possible.

The desire for panaceas is doubtless at the root of many of our contemporary difficulties in educational science. Men emerging onto the plane of rational thinking have always sought simple keys wherewith to unlock the doors of complex phenomena. Philosophy has sought its primordial substances, alchemy its philosopher's stone, medicine its panaceas, old age its fountain of youth. Half-evolved sciences like education, politics, and industrial psychology find men's hearts still set on magic formulæ, catchwords, and pet doctrine.

Educators still persist in seeking a simple formula that will state the aim of education. As well ask with the metaphysicians, "What is the aim of life itself?" We can, of course, please our respective fancies from a wide range of speculative formulæ, each of which, in the last analysis, is probably about as good and about as bad as any of the others. "Education is life itself"; "education is preparation for life"; "education is development." We can say with confidence that "the aim" of education is: character; self-realization; social efficiency; all-round development; preparation for social living; culture; godliness; the full development of the spiritual nature; the training of the mind; and many others. These are all true. Given some liberty in the definition of terms and the postulation of necessary effects from implied causes, we can confidently say of any one of them that it is *all the truth.*

The trouble is that none of these formulations can be made to give effective guidance to practice. They furnish no satisfactory tests of the comparative efficacy of different aims, different means, different methods. When we come to translate them into the concrete realities exhibited in every-day life, they are illusive rather than directive.

We can get ourselves on solid ground by recognizing what are, in the estimation of the best minds of our time, the practical values of life as discussed in Chapter XXII. Common sense has recognized for many years the great desirability of having all men and women able to read, write, and "cipher" up to some reasonable standard of proficiency. We are all agreed that good follows teaching children the simple facts of modern hygiene. We agree that good results from a reasonable amount of physical play by the young. It is well for society, and well for the individuals immediately concerned, that some people should be trained to apply trigonometry, to read Japanese, to conduct research in chemistry, to draft mechanical designs, and to write fiction.

EXPANSION OF EDUCATION

Multiplication of educational offerings takes place in all progressive societies. The time and learning abilities of all children or youths are limited. There was a time, so many believe, when it was within the powers of an able-minded and favorably circumstanced man to learn all that was then known of science, history, languages, literature, and philosophy. But the expansion of knowledge that has taken place in recent centuries, and conspicuously since the invention of printing, has been such that no person, however much of genius, could master more than a small fraction of it in a lifetime. It is claimed that no one person can cover the now known knowledge in such fields as biology, chemistry, or archæology.

A boy entering school at six years of age, and continuing steadily at work until twenty-two,—the usual age of graduation from a liberal arts college,—will have at his disposal for educational purposes—if he give due attention to recreation and sociability—fewer than twenty thousand hours. Set against this the wealth of educational offerings now available in the various grades of schools!

Even in the earlier years, according to the desires of his parents and teachers, this boy can take much or little of music, of drawing, of industrial arts, of physical training, and of gardening. They may or may not desire him to begin early the study of one or more foreign languages, some of the more advanced phases of mathematics, or some department of science.

On the level of secondary education, even including grades seven and eight, scores of studies, all attractive and some indispensable, according to the interests and prospects of learners, are available. Improvement in

oral and written English, preparation for the political duties of citizenship, extension of personal culture in the many departments of literature, history, natural science, foreign languages, mathematics, graphic and musical arts, and social science—all these offer numberless opportunities for education.

On the college level the number and variety of offerings in the modern institution becomes bewildering, as examination of liberal arts college catalogues shows.

"What Knowledge Is of Most Worth?"—the query set by Herbert Spencer—is a question that haunts every progressive educator to-day. We hear much about alternative courses, elective studies, and the need for educational guidance. The psychologist easily passes on from his discoveries of the widely varying native powers of children and adolescents to recommendations for their different educational treatment.

It is this situation that forces educators to turn to the social sciences for guidance in the making of curricula. The question "What should be the aims of education?" at any particular level, or for any specified group, can be answered only through scientific consideration, first of the desirable objectives in individual and community that can be served by any or many of the hundreds of educational means (subjects, courses, methods) now available; and second of the objectives that are found practicable when due consideration has been given to natural and other limitations in the powers of learners, and to limitations in the resources of the community for the conduct of education.

Sociology or social economy gives many direct approaches to the study of educational needs. These studies reveal, for example, the facts as to the healthfulness of the members of a given society. Problems of improving the situations found take us at once into the fields of medicine, governmental quarantine, employers' liability, and other non-educational departments. Early attention is focused, however, on education as a means of preventing ill health, of promoting physical vigor, and of paving the way for more effective coöperative action in the future. Health authorities studying sociological situations related to physical well-being are thus constantly setting educational objectives and tasks for the schools—for all levels of schools, too, from day nursery and kindergarten to the higher professional schools.

The aims of education have always been derived from some empirical study of social needs. We can readily understand ancient conquerors determining the needs of aristocratic education from a consideration of the governing and military tasks they had assumed. Where the general

acceptance of certain religious tenets and rituals is believed to be important, naturally these are instilled through whatever kinds of schools are there available. If much supposedly valuable knowledge and power is stored in a non-vernacular language,—as was Latin in the Renaissance period, and as is English to-day to the Chinese,—naturally training in that language is deemed of very great importance.

A scientific social economy wants more and better: social control; use of leisure; vocational competency; international friendliness; conservation of natural resources; art appreciation and interests; temperance; thrift and conservation of capital; facilities for childhood and adult recreation; municipal government; suffrage; religiousness; interest in agricultural production; and scores of other worthy objectives. The most universal agency wherethrough it is urged that these are to be achieved is education—an education believed to be especially possible somewhere between infancy and manhood.

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CHAPTER VII

PHYSICAL EDUCATION: SOCIOLOGICAL FOUNDATIONS

INTERPRETATIONS OF EXPERIENCE

EXPERIENCE with illness, accident, premature death, and physical defectiveness falls to the lot of every one. Doctors, pharmacists, and sanitary inspectors play large parts among civilized peoples. It is widely believed that the more civilized we become the more are we the victims of health derangements. Too little work impairs the physical resistance of some, whilst too much work seems to cripple others. It is alleged that many middle-aged Americans suffer, and even die, from diseases consequent on overeating. It is certain that some Americans, as well as multitudes of persons in other lands, die from diseases caused by undernourishment.

Man has fought ill health and accident all through his long evolution. His instincts, like those of other animals, helped him in part to avoid cliffs, water, beasts of prey, fire, and some poisonous plants. Probably they helped him but little to avoid infective diseases, except, possibly, in the case of infected wounds. But long ago he evolved a host of health customs—many of which, we now see, were profitless superstitions, outgrowths of his first attempts at a rational understanding of his multiplying health problems. In the course of a few hundred centuries modern medicine was produced.

Long ago, too, our ancestors appreciated the need of strong, enduring, and skillful bodies among men for fighting and hunting. Likewise, they prized beautiful bodies among both men and women. Various means were evolved of training the young and decorating the matured. Probably there have been long periods in the past, like those told of in Spartan and Athenian history, when "body culture," of one kind or another, was more highly developed than it has been in modern times.

Modern medicine thinks more in terms of prevention than of cure of ill health and accident. Nations and cities develop machinery to arrest infection, and to take public charge of some kinds of infected persons. The teaching of hygiene becomes increasingly the responsibility of parents, teachers, and social workers. In a thousand ways we seek by education to conserve health and to build up bodies capable automatically of resisting disease. We are on the road to the socialization of medicine and physical education, as the reader will find himself already somewhat aware in answering these questions:

1. What is the sociological significance of compulsory vaccination? Quarantine of scarlet fever and diphtheria in urban homes? Quarantine of yellow fever in ports? State-supported sanatoriums for the tubercular?

2. What scientific facts important to contemporary physical education are now available with regard to: the prevention and cure of hookworm; the prevention of yellow fever and malaria; the prevention of plague, cholera, typhus, anthrax?

3. What seem to be some of the collective responsibilities of citizens for the diminution or prevention of typhoid, tuberculosis, alcoholism, venereal disease, and infant mortality? What parts are school and special education, at their best, now playing in these matters?

4. What information do you possess as to the increase of average longevity and the reduction of death rates in modern civilized countries?

5. What knowledge do you possess as to the extent of the use of "patent" medicines in America? Why are these slightly advertised in best magazines and largest newspapers, and very much advertised in smaller newspapers, and especially in certain parts of the country?

6. Assume a case-group of twenty city-reared girls of less than average mental ability, having had rather old-fashioned and inferior schooling through the sixth grade, and coming from inferior, half-slum-like environment. At fifteen years of age they are about to take up regular work in a textile factory, working forty-eight hours a week. Most of them have now fair to poor health and low appreciations of self-care.

a. What would you estimate to be the most significant "shortages"—of knowledge, habit, ideal, physical development—of these girls for (1) the work they are soon to do, (2) their family life, often to thirty years later, and (3) their general happiness?

b. Given fifty days and eight hours a day, all to be devoted to laying foundations for future physical well-being, during all of which you could control the regimen, and guide the physical education, of these girls, what programs would you set up?

7. Does it appear to you that civilized human beings are usually possessed of more or less "physical well-being" than the uncivilized? Are human beings less "physically well" than wild animals? Domesticated animals? Wild plants? Domesticated plants? Using the terms "morbidity" to cover all kinds of departures from physical well-being (except accident) and "premature mortality" to indicate unseasonable death, what do you estimate to be "morbidity" and "premature mortality" rates at different age levels of various case-groups of Americans? Is there more morbidity among women than men? Rural adults than urban adults? Manual workers than brain workers? White than colored? Recent immigrant than old stock? Of low native intelligence than high? What replies to these questions can be deduced from the "draft figures" (in report of Surgeon-General)?

8. What does biology indicate as to probable evolutionary (adaptive) changes in the human body since the advent of beginnings of civilization—perhaps ten to fifteen thousand years ago? What of probable adaptive changes since upright posture was assumed?

What evidences seem to be presented by women that the upright position is not yet fully "natural"? By men? Children? Do we seem to suffer diseases of atrophy (easy lodgment of pathogenic bacteria in tissues and glands of jaw, teeth, tonsils, nasal cavity, intestines) because of relative disuse imposed by cooked and concentrated foods?

Compared with primitive man, do civilized adults probably tend to overwork or underwork these organs: lungs, eyes (for long ranges), eyes (for short ranges), kidneys, heart, "nerves"? Are the following forms of work relatively natural or unnatural (in terms of native adaptation of the body to them): counter salesmanship; typewriting; elementary school teaching; work in steel mills; farming; kitchen service; watch repairing; seamanship?

9. What are the varieties of pathogenic bacteria known to you? Which of these are probably omnipresent, but do serious damage only to the weak? Which are capable of successfully attacking the strongest, but are usually kept at a distance by sanitary measures? (Consider separately agencies of: measles; syphilis; yellow fever; typhus; bubonic plague; sleeping sickness (African); typhoid; tuberculosis; wound sepsis; colds; malaria; pyorrhea; influenza.) What of agencies of hookworm, whooping cough, ringworm, chicken-pox, diarrhea?

What are effects of modern travel, living in cities, immigrations, etc., on distribution of pathogenic organisms? How offset by quarantine? What can physical education do to promote relative immunization? Or effective resistance? Toward which diseases? In what directions is this process apparently useless?

10. From the standpoint of physical functioning, what are the earliest ages at which normal "mating" of the sexes can take place? What are the restrictions and postponements imposed by civilized society? Why? What are the "strains" and liabilities to "pathological" activities thus entailed? Why is "sex hygiene" an important objective in modern education? What are its unsettled problems?

11. Is it probable, in view of the evolutional history of man, that "physical work" (meaning chiefly persistent routine use of the "large muscles" as now seen in many forms of outdoor manual work) is an essential means of producing the development of organs, qualities of endurance, and powers of effective metabolism characteristic of optimum physical "well-being"? Had the children who formerly "grew up" on farms ample opportunities for such "developmental work"? Do modern urban children now find such means? Under what conditions? Contrast boys and girls. Are the contributions to

best physical development of play and of work probably the same? From which, in all probability, come mostly the qualities of persistent endurance required in adult life?

Do children from ages seven to fifteen in cities now "work" with their "small muscles" and "nerves"? In what ways? Is such "work" probably relatively "natural" or artificial, from the standpoint of the body as we inherit it?

12. Why do warlike and conquering peoples relegate to slaves, serfs, and peasants low forms of manual work? Why, as wealth and security increase, do they prefer to have their wives, daughters, and female entertainers freed from all "manual work"? What are to-day the ideals of men as regards heavy manual work? Of women? Of men for their favorite women?

What are the immediate effects of "freedom from toil" on young women? Their physical beauty? Strength of body? Powers of normal parturition? Susceptibility to disease? Do such women usually overeat? Oversleep? What proportion are usually valetudinarians at ages thirty-five to sixty?

Is the ideal of a "life of leisure" popular with young American men to-day? With young women? What are the probable consequences to young women to-day of working for wages and at the same time striving to "keep as beautiful" as do women of leisure? What on bodily strain? What through health handicaps—dress, shoes, complexion, long hair, insufficient sleep?

13. What kinds of strains upon bodily organs are imposed by the demands for foresight, thrift, life-career planning, and the like, imposed by modern life? Contrast the fears of primitive man with those (as solicitudes, apprehensions, worries) of modern man as to pervasiveness, effects on digestion, recreation, cheerfulness, "nerves." What are probably physical effects of the cares that now harass middle-aged, middle-class men and women relative to: savings, vocations, children, opinions of associates, competition for distinction, etc.?

14. How can "educative processes" contribute to physical well-being? Consider separately:

a. Instruction in the known facts of hygiene.

b. Training in hygienic practices (to what extent practicable in the limited hours of school?).

c. Development of active ideals of health, strength, endurance, grace, skill.

d. Conservation of sanitary conditions for school "work"—lighting, seating, rest or recreation periods, ventilation, print, tools, dust, hours, etc. (Should "food nurture" be included? Sleep? Physical cleanliness? Safety on streets?)

e. Medical inspection for communicable diseases and for chronic defects, leading to public or private provision of remedies.

f. Direct and purposive reactions on home conditions and procedures, from teachers, physicians, and health nurses through messages, visitation, etc.

g. Provision, through or under auspices of schools, of means of "physical development." Separately consider: physical play (with material and social accompaniments?); nurture; rest and sleep; physical work.

h. Specific corrective physical training of defectives—heart, spine, underdeveloped limbs.

i. "General physical training." (Is there such a thing? What should be controlling objectives?)

j. Specific physical training for known needs of adult life—war, (named) vocation, maternity, resistance to (named) disease, social art (*e.g.,* dancing).

15. Do the procedures proper to vocational education contribute to physical education? Is physical education to be regarded as an essential or accessory means to vocational education? Many vocations—bookkeeping, chemical factory work, farming in malarial districts, school teaching, etc.—impose particular strains on strength and health. Should preparation to meet these be given in special vocational schools or in schools of general education?

Do the procedures proper to social (moral, civic, religious) education contribute to physical education? Directly, or incidentally? Is physical education to be regarded as an essential or as an accessory factor in social education? Does physical soundness usually produce moral soundness? Are the physically unsound generally morally unsound as well? Are the purely physical sports essential means of "socializing" the individual? In a few particular respects important in adolescent life, or generally? Does the "socialized" character of yourself and your adult acquaintances—women teachers, society women, prosperous farmers, unionized working-men—seem to prove this?

Does physical education make important contributions to cultural education? Directly? Indirectly? Are the "cultured" adults among your acquaintances usually possessed of more, or less, "physical well-being" than the uncultured? Judged by some of the world's most productive workers,—Cæsar, Leo XIII, Darwin, Spencer, Parkman, and numberless others,—how would you revise the adage *"mens sana in corpore sano"?*

MAN'S PHYSICAL HERITAGE

Nature gives safety, health, and prolonged life somewhat more to her organic creatures of the plant and animal world than she gives accident, disease, and death—otherwise there would be no life on earth. To the superficial understanding it may appear that wild plants and animals are seldom "sick," and that death comes to them mostly from accident or conquest by others. Similarly, it seems to us that domesticated plants and animals, as well as man himself, are much subject to diseases. But our easy inferences here are only slightly reliable.

Biologists find that where an organic species has existed and reproduced

in a fairly stable environment for long periods—which may well be into hundreds of thousands of years—it tends steadily to become better "adapted." This means, among other things, that the species becomes steadily more successful in resisting its ancient enemies in that environment—perhaps in striking a sort of "symbiotic compromise" with them—and in sustaining itself in fairly normal ways. Before man intrudes upon new regions with his novel varieties of disease germs and predatory activities—from the standpoint of the "old inhabitants"—it is probable that rabbits, deer, passenger pigeons, pines, and grasses lived very healthy lives, on the whole. It is very possible that the wild progenitors of our domesticated sheep, turkeys, horses, swine, and apples were less subject to disease than their specialized descendants, if for no other reason than that they had long been adapting themselves to their environment through processes by which "the most fit to survive" had reproduced and sustained to maturity the larger number of offspring.

But if the environment is changed, or if a new enemy comes in,—which in itself constitutes a change of invironment, obviously,—then the wild creatures have their troubles no less than the tame. America, biologically a kind of simple and uncontaminated continent as contrasted with Eurasia, has been peculiarly a sufferer from these disturbances of old balanced environments. The whites brought diseases which, like measles, were not very deadly to the invaders, but acted as a scourge to the invaded. San José scale, boll weevil, hog cholera, and chestnut blight bring long seasons of ill health to certain plant and animal species.

But domestication may itself be the chief cause of disease, since it changes the conditions under which creatures grow and habituate themselves. Domesticated plants and animals, because they are specialized to certain purposes, and perhaps concentrated in certain areas, fail to develop adequate resisting powers—to lions, or bacteria, or cold—and hence, unless artificially protected, fall easy victims to adverse conditions.

Domesticated man is the most domesticated of all creatures, in one very real sense of the word. He tries to adapt himself to more different environments than any other species. He himself produces artificial changes in his environments, which no other creatures can do. Small wonder, therefore, that he must wage a constant struggle with diseases and with accidents that are superinduced by the artificial conditions he has created for himself. Here are some of the "artificial" necessities he has, figuratively speaking, imposed upon his physical body in order to achieve other, and presumably more valuable, "goods":

1. He has assumed the upright posture.

2. He has become omnivorous and dependent upon concentrated and partly predigested foods.

3. He has divested himself of hair and taken to clothes as body covering.

4. He travels and intercommunicates so much that his pathogenic bacteria and protozoa are distributed widely.

5. He has developed extensive necessities of using his eyes at short range.

6. He artificially heats his living places.

7. He has compelled postponement of sex mating.

8. He has made routine work, often of very "unnatural" kinds, such as tillage, mining, manufacturing, bookkeeping, dish washing, and writing, a necessity.

9. He tends to increase "nervous" at the expense of "large muscle" work.

10. He has compelled large numbers of women to specialize toward increasing their "decorative" functions.

11. He has permitted and promoted conservation of those born weak and those who acquire weakness, and has even aided them in the perpetuation of their own kind.

ARTIFICIAL PHYSICAL CONDITIONS

The upright posture was probably evolved as a human quality many hundreds of thousands of years ago. Doubtless it gave a multitude of advantages in the struggle to survive, among them being: freeing of hands and arms, thus permitting the use of clubs, missiles, and other tools; and providing superior carriage for the enlarged brain. But the process entailed severe physical disabilities on a body structure seemingly adapted originally to quadrupedal or quadrumanous positions. These disabilities fall especially heavily upon the reproductive organs of woman and the abdominal sustaining walls of men. In spite of considerable adaptation that has doubtless taken place over the centuries, men still suffer much from hernia, and women from displacements due to abnormal strains imposed upon the hereditary body structure. Possibly some digestive and circulatory disturbances are aggravated also by the upright posture. Educators find frequent need of correcting posture defects in the young.

The digestive system of man possesses many limitations, due to its archaic adaptations. Barbarous and civilized men seek constantly for more concentrated and energy-giving foods, and ease of digestibility has

long been promoted through the anciently domesticated arts of cooking. Century by century, therefore, he creates new conditions for his old digestive organs. By careful study and attention he can keep them from trouble, but the task is a serious one, and apparently becomes more difficult and delicate as new conditions of habitat, work, or nutrition are assumed. A late and, perhaps, unexpected stage is the modern cultured woman's alleged inability to nourish her infant in natural ways, thus putting back to the very gateway of life the struggle to maintain digestive health in the face of biologically novel conditions.

Artificial body coverings, for decoration, protection against weather and brambles, and as a means of carrying supplies, necessitate some redistribution of the waste-disposing and temperature-regulating functions of the skin. Under some circumstances, probably, additional burdens are thrown on lungs and kidneys. Man's artificial adaptation to strange environments has, outside the tropics, been achieved in part by his adoption of clothing. Civilized man heavily clothes even his infants and small children, thus depriving their bodies, not only of stimulating contact with air of fluctuating temperatures and humidities, but also of considerable freedom of movement. How far scientific hygiene should put to the account of clothes a variety of prevalent susceptibilities to colds, nervous derangements, and lassitudes, as well as the other minor or major ailments of highly civilized peoples, it is impossible yet to say. But there can be little doubt that we pay heavy prices in vigor and normal well-being for the advantages purchased through clothing. Perhaps a hygienically wiser generation than ours will find better adjustments of gains and losses here than we have yet learned.

Microörganisms of various kinds prey upon the living human body. In many cases these, apparently, persist, apart from their human hosts, only in certain regions. But the effects of trade, the migrations of men, and the congestion of populations in large cities are constantly to disseminate these lower animal and plant breeders of disease. The causative agents of such communicable diseases as measles, pneumonia, tuberculosis, scarlet fever, syphilis, and of numerous afflictions of nose and throat, seem now to be almost universally distributed. Civilized states have learned to arrest the spread of cholera, bubonic plague, yellow fever, and some others. Influenza epidemics start periodically from some obscure center, perhaps in northwest Europe, and sweep round the globe, in spite, as yet, of all quarantines. Some silent "carrier" of typhoid bacteria from time to time infects a collective water or milk supply, and a local epidemic must be fought.

Primitive man, knowing nothing of the origins of his "germ" diseases, could only submit to them and hope to acquire, in the course of long generations, by the survival of the more resisting, a certain immunity—as did the peoples of Europe and Asia, apparently, toward measles, the dwellers in central Africa toward malaria, and the Chinese toward typhoid. Sometimes crude devices of antiseptics or aseptics were, half superstitiously, evolved; and sometimes the expulsion of the infected, as in the Biblical case of lepers, may have helped.

But even in prehistoric times it must often have happened that the migrations of conquest, and the penetrations of trade, brought in their wake germs of diseases of great virulence to peoples who for long had not been subject to them. Contemporary man now accepts the necessities of migrations, especially those of peaceful nature. Steamer and railway trains incessantly thread their ways between cities. Man and commodities are certain to bear the seeds of many diseases. Only a few can as yet be arrested by quarantine. All over the civilized world, medicine and education now unite forces to enable man to do successful battle with his microscopic enemies. The best means are found to be various—perhaps never quite alike for any two types of disease. In some cases the best resistance is the well nourished, robust body. In others the causative agent must be extirpated or imprisoned in one area. In still other cases artificial immunity procured through inoculation is most effective.

In the more progressive countries man long ago exterminated those larger beasts that preyed upon him and his possessions. But only recently has he developed knowledge and tools equal to the task of fighting the insects that so largely consume his food, and the bacteria and protozoa that devastate and poison his body. Now it is certain that, except in rare instances, only collective effort—extending even to various specific forms of international action—can enable him successfully to wage war on these enemies. Nowhere is the adage "Man liveth not unto himself alone" more applicable. Here again we are simply paying a price for civilization—for security, health, and happiness. The price is heavy, and only large returns will justify the outlay.

"The eye" is, obviously, an organ of much sensitiveness, having in mind not merely the nervous structures required for its functioning, but also the numerous small muscles essential to its flexible focusing. It may be doubted whether civilized man uses his eyes *more* in general than did his long line of early ancestors. But undoubtedly he uses them far more at the short ranges required for reading, writing, needlework, and many kinds of handicraft production. And, wisely or unwisely, we impose not

a little of this work on children from six to twelve years of age. The eyes become, inevitably, severely overworked organs. Fortunately, science has here found aids of the most decided usefulness for print-reading moderns.

Man's optimum adaptation is probably to only one type of climate, as is contended by Huntington. Hence, when he seeks to live in regions not favored by this "best" climate, he must pay the price in various ways—in long periods of semi-hibernation in the far north, in the diminished vitality of the torrid zone, and in poorly adjusted dietaries in others.

Under conditions recently evolved among the more civilized peoples, elaborate housing and the heating of resting and working places creates in effect highly artificial climates to offset the rigors of natural climate. The wealthy woman of Chicago or Boston now spends nearly all her winter hours in warm and often very dry air. She travels in heated cars and automobiles, and heavily wraps herself in furs and overshoes, even for short walks. Even schools now seek to provide closed, warmed, and artificially ventilated places for gymnastics and other physical exercise.

The ultimate consequences to physical vigor and health of thus perpetually "softening" our climate are still probably but half apprehended by science. In part, of course, our housing and heating, like our clothing, serve to release energy, time, and interest toward the realization of other "goods." But from time to time we may discover that the price being paid, either in the health of those now living, or in their failure to have strong progeny, is excessive. It is probable that among the causes contributing to the morbidity and "defunctionalization" of modern educated and prosperous woman after she has passed adolescence, her addiction to the "soft" life of furs, steam heat, and warmed cars must be given important place.

Mating or marriage interacts upon the physical vitality of adults in numberless respects. As respects no other function has man found it more necessary to "domesticate" or "artificialize" himself in order to attain to the goods of advanced human life. The mating instincts and powers obviously mature, or at least become functional, in adolescence. But somewhere far back, perhaps under the necessities of conserving powers and interests for warfare, men found it expedient to hold their warriors to celibacy and continence well into young manhood. Similarly it long ago became expedient to enjoin chastity upon young women.

Not always, even among civilized peoples, has there persisted the tendency to postpone marriage far beyond the "natural" season for it. One must infer that among people living chiefly by tillage of the soil—

Ireland, India, and China give examples—there has often prevailed general approval of early marriage—so early, indeed, that no considerable "strains of continence" have been imposed upon young men and women.

But, under conditions now familiar, the large majority of men do not marry until some time between twenty-four and thirty years of age; whilst the modal age of marriage for educated women seems to fall between twenty-one and twenty-six. This means a long period—five to fifteen years—during which approvable men and women should be continent. The moral temptations of this period are commonly appreciated, and often carefully provided for; but the attendant hazards to health, strength, and future virility involved are probably as yet but slightly understood. The price that has long been paid for deferred marriage in prevalent vice, illegitimacy, and permanent celibacy has been a heavy one. But nearly all the conditions of civilized life—adequate education, a proper start in life, the secure founding and maintenance of a family—seem to necessitate it. We may not expect to go backward in these matters; we must go forward, but with clear understanding of, and, as far as possible, forearming against, the consequences.

Work, of one kind or another, has always been the lot of man, as of every other species that makes its way in the world. But domesticated man has modified his own work no less than he has modified that of the horses, oxen, elephants, camels, and dogs that he has tamed. The "work" of primitive man is much like the play of boys during and after puberty—sporadic, often intense, and bent on immediate goals. Before tillage of the soil became a chief means of subsistence for particular peoples, it is readily apparent that their activities in hunting, fishing, nut gathering, herding, and fighting their fellows were of this irregular, eager, and driving character. The men, even more than the women, must "keep fit" and store up energy; when the occasion for a hunt, foray, expedition, or wild harvesting arose, they must be prepared to undertake it with resolution, if not a certain fierceness. It is well known that all savages loathe "steady work"; that they work well for short intervals, after which they crave a holiday or vacation.

In the biological sense, therefore, civilized man has had to adopt what has always been relatively "unnatural" work. He has had to wage a persistent campaign with his adolescent boys to "break them in" to habits of steady work. When frontiers were still open, large numbers of these boys ran away to become hunters, cowboys, and settlers, in the hope of escaping unremitting and unattractive toil at home.

Doubtless men in large numbers found steady toil a necessity when

they began to till the soil for a living. Conquest and enslavement of soil-tilling peoples by warrior guilds or tribes increased routine labor and drudgery. Mining, quarrying, extensive building of forts and temples, lumbering, ship rowing, and other forms of "steady work" evolved apace. The "mechanical revolution" caused the gathering into factories or on railroads processes of bodily labor in the weaving of cloth, the forging of metals, the shaping of wood, and the portering of freight, which had long been going on in a dispersed fashion.

Civilized man has had to adapt himself to routine labor—which is in a sense as "unnatural" for him as is the "work" of Flanders dogs or American horses. The body of a warrior is now "chained" to a factory lathe. The spirits of hunters are buried away in the men who spend a daily six or seven hours, year in and year out, taking down coal in the damp, gassy air of a mine. The man who sits all day on a stool, keeping books, differs physiologically hardly at all (in his beginnings) from those of his progenitors who fought and fished and roved the earth one hundred centuries ago.

How far is man biologically adaptable to routine work, or how far has he become adapted to some of its older forms—*e.g.*, wood getting, tillage, and sea fishing—by the few centuries during which selection has been favoring certain types? We do not know. But these things seem certain: many kinds of routine work can easily lead to physical and, perhaps no less, to "spiritual" ills, if not on the one hand carefully regulated as to long hours, strains, and other conditions adverse to prolonged good health, and if not, on the other hand, compensated by systematic recreative activities designed to give wholesome exercise to neglected functions of muscles, nerves, and social instincts.

Civilized man must increasingly use power-driven machinery as a means of doing the work whereby rising standards of living can be maintained. Power-driven machinery inevitably entails division of productive process, "quantity production," standardized parts, and the other concomitants of the "factory system"—whether we be thinking of the production of cotton cloth, men's hats, school desks, canned meats, and magazines, or of wheat, lumber, sea fish, moving pictures, travel, or cooking. In each and all of these directions, necessary machine installation and operation can readily bring the work of man, woman, or juvenile under conditions that, perhaps not at once visibly, may slowly impair body or mind, normal interests, or will.

"Industrial diseases" of many varieties have long been studied by hygienists. Strong popular support has often been given to movements

for "a shorter working day"—even by farmers, teachers, and home-makers who can not themselves accept shorter hours—because of a growing conviction that only under such conditions is permanent bodily and mental health to be assured to the routine worker. Movements for the curtailment of "child labor" have owed much of their support to popular convictions that the still growing body of the juvenile worker can not mature normally under conditions imposed by toil in factory, mine, or place of merchandising.

Nervous work, or "brain work," as so largely demanded in civilized societies, is unquestionably a prolific source of disorders to health. Technically, of course, all work involves both muscles and nerves. But popular understanding recognizes far-reaching differences of kinds and degrees of strain between day-long woodchopping and bookkeeping, between spading ground and teaching school, between laying brick and designing buildings. Doubtless primitive man's necessities imposed upon him periods requiring utmost concentration of attention, as well as seasons of great fear, worry, or other nervous excitation. But all of these differed very fundamentally from the prolonged and regularly recurrent strains imposed in civilized societies upon dentists, reporters, bedside nurses, proof-readers, saleswomen, silk-weavers, lace-makers, professional musicians, and mothers in elaborate apartment houses.

In all probability, man's physical body is poorly adapted to the strains imposed by all these, and many other, forms of "nervous" or "small muscle" work. Only by intelligent and careful regimen and conscientious devotion to "compensating," "recreative" activities can the damaging consequences of these strains be offset and the body kept well and strong into mature years.

Decorative women—that is, women who are encouraged and expected to specialize largely in embellishing their immediate social groups and in contributing to the esthetic satisfactions of certain of their associates—were doubtless evolved in rare cases in very primitive societies. But legend and history would seem to give them a sort of institutional status only after the appearance of conquering and governing classes. It appears that, very generally, conquering men have eschewed manual labor. They have specialized in fighting, in governing, and in sports. Naturally, they have expected their wives and daughters to abstain from coarser forms of physical labor, and to preserve their physical attractiveness. Very commonly, also, these conquerors or hereditary aristocrats have been disposed and able to preëmpt or purchase "entertainment" as that could be provided by beautiful, and sometimes artistically or intellectually gifted, women.

Nature has provided that women and men, like numberless other species, shall develop, and even compete in, qualities of physical attractiveness as a means of sexual selection. In spite of toil and hard conditions, the adolescent sons and daughters, even of savage peoples, pass through a "blooming" stage when nature and human arts are united to make them winsome and luring. Normally, however, this blooming is for a spring-time season only. After a few years both men and women settle into the routine duties of life, wherein but slight and occasional thought is given to the natural or artificial decorations that seemed so important in the early years of mating.

But the wealth, power, and culture standards made possible by conquest introduce quite new conditions for large proportions of the women of the powerful, and for such of the aristocratic men as are not forced into the hard work of fighting or governing. Queens and princesses, according to nearly all legend, have beautiful hands, hair, and skins. They have never been the victims of grimy toil. Their toilette is ministered to by hair-dressers and other artists. They come and go amidst draperies and perfumes. They are real ladies of leisure. Their functions are entertainment, esthetic and intellectual ministry, the diffusion of graciousness.

Egypt, Persia, Greece, Rome, China, India, all Europe throughout medieval and modern periods—in every one of these, decorative women have played their rôles alongside of rulers, landowning aristocrats, military leaders, and political officials. Competitive enhancement of their esthetic graces carried them into endless intricacies of dress, foot-binding, atrophy of large muscles, and unnatural prolongation of youthful appearance. For such women aging was an evil far more dreaded than disease or quick death.

Under some conditions men also were enabled to specialize in decorative ways. Examples are to be found in France of Louis XIV, in England of not many decades ago, and elsewhere. But, commonly, political insecurity kept the men in action. If hereditary fighters and governors did not keep "fit" a new invasion created new leaders. The wives and daughters and entertainers of the elect, however, rarely changed their conditions—the standards were too well established. They persist into our own day, but with consequences that are now far more serious than formerly.

Modern woman, in the democracies of to-day, is not expected, and does not herself, at her best, expect to be a "lady of leisure." She has her work to do. But, in a constantly widening range of cases, she is expected (and therefore herself desires) to be decorative as well as useful. It is

a hard combination to make. It breaks the bodies and the spirits of even the best.

Roman, French, or English aristocrats—and in recent centuries that included men made aristocratic only by the possession of income-producing wealth—would not, of course, allow their daughters to "work." These daughters competed in ornamenting their persons and surroundings, and in trying to win the most promising of supporters—that is, husbands who could assure them position and security.

In democratic America every man is an aristocrat—and certainly his daughter is as good as the daughter of any one else. Mothers and daughters think so, too. So they all try to become decorative. At one stage of their economic evolution prosperous farmers desire that their daughters shall not make themselves "coarse" by manual work. The daughter of the city artisan goes to work at sixteen. But it must, if possible, be "nice," "light" work. She must try to preserve her decorative qualities whilst earning a living.

Can our modern women carry the double load of work and decorativeness? Perhaps even parasite women can keep their health when they have endless time and comfortable surroundings to aid them in recovering from their dissipations and the strains of keeping decorative. But can a person do a day's work, and also continue to give time, energy, and painstaking attention to decorativeness? That is the problem for millions of modern women, a large proportion young, but not a few middle-aged, married or celibate.

The conservation of physical fitness on any extensive and scientific scale prevails as yet among only very advanced peoples. High birth rates even yet are in most parts of the world accompanied by high infant death rates, which probably subtract most heavily, either from children of lesser vitality, or from the children of the less vital parents. But civilization at its best seeks to conserve all human life, even though it now accepts the thought that it is under no obligations to suffer the manifestly unfit freely to reproduce their own kind.

Formerly it was not merely the hazards of infancy that played Nemesis to those born with physical handicaps or low potentialities. War, famine, vice, disease, and worklessness doubtless removed hosts of the weaker before they could become possessed of descendants. The race was then certainly to the strong—the race for heirs no less than for power and health. Now sanitation, clinics, charity, scientific warfare, and specialized industry create endless niches in which the physically frail can exist,

perhaps thrive and multiply. The load thus imposed upon health-conserving agencies becomes steadily greater.

FOR SUPPLEMENTAL READINGS AND REPORTS

ANDRESS, J. M. *Health Education in Rural Schools* (Ch. 1, Why Health Should Be the First Aim of the School; Ch. 2, Play and Physical Education).

BINDER, R. M. *Health and Social Progress* (Ch. 5, Health and Civilization; Ch. 10-12, Health and World Progress).

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CHAPTER VIII

VOCATIONAL EDUCATION: SOCIOLOGICAL FOUNDATIONS

INTERPRETATIONS OF EXPERIENCE

ALL adults, except a few rare social parasites, follow vocations. Only those of our activities that are directed toward earning a livelihood or doing our share of the world's work are properly vocational. Outside of the time given to pursuit of vocations, we play, rest, sleep, and divert and recreate ourselves. We give time to politics, worship, care of our families, and otherwise, outside of the seasons claimed by our work.

What is a vocation? The dictionaries, as well as popular usage, admit of several different definitions to the word "vocation." But the most nearly universal meaning is that which restricts its meaning to "that occupation by which one earns his livelihood." A man may have several occupations—in politics, recreation, care of family, participating in entertainments, and the like—besides his vocation. Children, aged persons, and defectives do not, as a rule, have vocations. Not all vocations are in the wage-earning class. Farmers and home-makers have their vocations no less than clerks and teachers, even though they do not receive regular wages.

In fact, all normal adults have vocations—and this applies to more than sixty million persons in the United States.

What part of these sixty million adults had vocational education? In the broadest sense of the word, all have had it. Nature does not give men specific vocational instincts, as it does bees, ants, and beavers. All the adult workers of America to-day, as well as nearly all the adults of past history, had to *learn* their vocations—that is, they had to learn from others, and by experience, how to hunt, fish, till the soil, build, mine, and manufacture. In the true sociological sense, therefore, all adults have had, somewhere and somehow, a vocational education—a good, a bad, or an indifferent vocational education.

Fundamentally, American workers have had three different kinds of vocational education: in schools; through apprenticeship; and by "pick-up" methods.

Probably from 5 to 6 per cent. of the sixty million adult workers now in the United States were trained to greater or less degrees of proficiency for their respective callings in vocational schools, each staffed, equipped, and adjusted to its particular work. Most physicians, dentists, pharmacists, and regular officers in army and navy are the products, in the first instance, of vocational schools of the professional class. Most stenog-

raphers, some elementary-school teachers, a few bookkeepers, many engineers, and some agricultural experts were started on their careers by specialized schools, designed in each case to prepare for one vocation, or at most a few related ones. But almost none of the carpenters, salesmen, farmers, miners, or home-makers now found in the United States were vocationally trained in schools.

The second source of vocational education is organized and standardized apprenticeship. Somewhere between 5 and 7 per cent. of our workers can thank apprenticeship education for their start in life. These include nearly all printers, plumbers, pattern-makers, silversmiths, and locomotive engineers; considerable proportions of carpenters, electricians, and stone-masons; and a diminishing number of machinists, bricklayers, and house-painters.

True apprenticeship education has never flourished in America in manufacturing, mining, and transportation. It lives in the handicraft trades, of which the building trades are the principal group. Increasing use of machinery, specialization of productive processes, and the mobility of free American labor are not conducive to good apprenticeship. Apprenticeship between parents and children has never given adequate vocational training for any but the crudest and simplest of vocations.

The third great method of vocational education, and one very much in vogue in America, is the "pick-up" method. The learner is put to work at the least difficult portions of the job—washing dishes, hoeing corn, selling books, operating a lathe, digging coal, or driving an automobile. His instincts of imitation are called upon. At irregular intervals he is shown some new tricks. If he "picks up" fairly well he is approved and kept. If not he is "fired."

Nearly 90 per cent. of all American adult workers are the products of "pick-up" vocational education. This includes practically all our farmers, home-makers, store clerks, sailors, factory hands, miners, and actors. It includes large proportions of our teachers, carpenters, and business men. Pick-up methods are the methods of *laissez-faire,* of easy-going democracy, of the frontier. In some cases these workers are truly "self-made"—that is, having found access to some field of work, they have struggled by "trail-and-error" methods forward to some sort of tolerable competency. In other cases fathers or mothers have clumsily steered them along. They have also imitated fellow workers, and often they have struggled forward by "trial-and-error" methods of some sort, their vocation has at best been hazardous, ill planned, and often in pursuit of wrong leads. "Pick-up" methods of vocational education promote maladjustments of kinds and degrees hardly possible to vocational schools or apprenticeship, both of which must early reject the unfit candidate.

Your personal experience with the vocational education of yourself and with that of some of your associates constitutes a good starting point for analysis of many of its problems:

1. What kinds of adults, if any, can you indicate who do not follow definite vocations? Do you restrict the word "vocation" largely to work in earning a

livelihood? Can vocations be criminal or parasitic, as well as honorable? Why do we say that children do not follow vocations?

How many distinctive vocations would you estimate could be found in an American city of one hundred thousand people? What varieties of the general vocation of salesmanship can you distinguish? What varieties of the vocation of farming? Does the vocation of home-making differentiate into several kinds? According to what conditions?

2. Take ten distinctive vocations, practitioners in which are known to you, and trace in each case the methods by which proficiency has been achieved. As far as you know, which of the following kinds of workers are largely trained in vocational schools: dentists, pharmacists, high-school teachers, house carpenters, hardware salesmen, range stock raisers, sailors, lumbermen, dressmakers, waitresses? What is meant by apprenticeship? What have been historically the usual conditions attaching to apprenticeship? Do you associate it primarily with large factories or small shops? Do boys and girls frequently become apprentices to their own parents? How many apprentices can one master workman usually educate? Of these vocations, which are usually prepared for through apprenticeship: house plumbing, stenography, law, elementary-school teaching, locomotive engineering, textile work in factories, gardening, coal mining? What are some of the conditions in America usually attaching to organized apprenticeship, length of apprenticeship, conditions of entry, compensation of apprentice, and guaranty of vocational education?

3. For persons not vocationally educated by apprenticeship or vocational school, what are the remaining methods? Are these anywhere organized? By what methods have the bulk of factory workers, clerks, small farmers, miners, seamen, and purveyors of entertainment reached their present attainment of proficiency throughout the United States? What is meant by unskilled labor? Is it ever completely unskilled, or is success in it at least dependent upon possession of bodily powers of strength, endurance, resistance, and possibly of special skills?

4. Why do many of the highest paid vocations—especially professions—now have regularly organized vocational schools, often supported by philanthropy or at public expense? Why, in your estimation, do so few of the poorly paid vocations have vocational schools?

What are now some of the uncertainties and defects of the apprenticeship method of vocational education? If you distinguish between acquisition of practical skills on the one hand, and of the technical knowledge appropriate for the vocation on the other, which, in your estimation, does apprenticeship give to best advantage? How might apprenticeship education be supplemented by other means in order to impart technical knowledge and intellectual flexibility?

What are the defects of "pick-up" vocational education? Does it help or

hinder choice of a "right" vocation? What evidence is there that it is a wasteful method? Would you interpret the contemporary "movement for vocational education" as primarily an attempt to substitute for hit-or-miss, "pick-up" vocational education some systematic vocational training in schools adapted to specific vocations? Why is not that idea readily received and approved?

5. How can society at the present time measure the social need for school vocational education in any particular field? How has this need been discovered in the past in such fields of work as elementary-school teaching, nursing, higher forms of agriculture, stenography, commercial art? By what means would you seek to prove to-day that there exists a social need for vocational education through special schools in: some of the salesmanship vocations; practical farming of several varieties; hotel cooking; textile factory foremanship; stationary engine management; high-school teaching; printing trades?

Should the social need for school vocational education at public expense be determined primarily by the needs of: industry at large; employers of labor; the needs of growing boys and girls; or the needs of the state or collective society? To what extent is vocational education of particular varieties justified by the possible need of special service in war-time? Is the social need of vocational education through schools greater in the unspecialized than in the highly specialized vocations? Is there more justification for the public support of vocational education in bookkeeping, pharmacy, electric wiring, or dressmaking than in the mining of coal, steel making, and meat packing? Should the state have a different attitude toward public support of vocational education for the fields of employment that are now absorbed by large corporations, as contrasted with those in which individual initiative still plays a considerable part? Why?

6. Specify certain vocations in which the degree of compensation of the worker is determined almost wholly by the possession of certain definite skills. Specify certain others wherein technical knowledge plays a very large part. Endeavor to separate, in the total proficiency found in each of the following vocations, elements of skill from elements of technical knowledge: general farming as practised in the Middle West; house carpentry; insurance salesmanship; salesmanship of children's wear; bookkeeping; kindergarten-school teaching.

What are the means by which vocational schools now train workers in skills—both those involving precision and accuracy, and the others involving speed? Separately consider dentistry, stenography, dressmaking, civil engineering, army leadership (West Point), elementary-school teaching.

By what means would you provide "school vocational training" to give skill to workers in such vocations as seamanship, machine-shop practice, motor-truck driving, weaving, machine woodworking, home-making?

7. What are some vocations in which it seems practicable to impart technical knowledge alone, leaving skills to be acquired later in employment? Illustrate for agriculture, electrical work, mining engineering, salesmanship, and various fields of applied art.

Is it your opinion that present tendencies in the evolution of vocational education are in the direction of requiring that vocational schools shall train in skills, as well as instruct in technical knowledge? Are there reasons inherent in modern industrial organization which render the teaching of skills through any form of foreman oversight difficult, if not impracticable?

8. Name some vocations that, in your experience, can be well followed only by persons of: high intelligence; extremely good physical development; some very special talent. Name some other vocations that can be followed by men of average ability, but only after prolonged training.

9. For which of these vocations do men or women seem to possess the largest easily available instinctive equipment: hunting, or composition in printing; the care of infants, or the teaching of a primary school; the care of domestic animals, or the driving of locomotives; exploration, or the writing of books of fiction? Do you know of any vocations for which it seems that men have at maturity as complete an instinctive equipment as bees, ants, hawks, or beavers have for their means of obtaining a livelihood?

10. Name and briefly describe ten kinds of specific vocational schools now found in the United States, nearly all of the graduates of which expect to follow and actually do, in most instances, follow the vocations for which they are trained. What proportions of these schools train for those higher vocations called professions? Which for the commercial vocations? Which for the industrial or trade vocations?

11. Give illustrations of situations in which man's productivity depends largely on the presence of natural resources; other examples wherein productivity depends greatly on accumulated knowledge of arts, and on inventions; other instances of heavy dependence upon capital, stored wealth, expensive tools, and credit; other instances of heavy dependence on prolonged security from war, fire, theft; other instances of dependence on high degrees of subdivision of labor, including expert leadership and minute skills; still other instances of dependence upon the general health, strength, intelligence, and friendly nature of the individual worker.

12. Granted the conditions called for in the preceding section, give instances in which high productivity or low productivity are dependent upon specific vocational training of the worker.

13. What are the characteristic methods of productive labor of primitive men as recorded in history, or as found now in the outlying parts of the world? Are you aware of marked distinctions among primitive peoples in the character of work of men and of women? If we consider warfare and hunting as vocations also, what are the earliest known forms of their

psychological accompaniments? Do some of these psychological qualities seem still to persist, and apparently give basic differentiations to the favorite occupations of men and of women?

VARIETIES OF VOCATIONAL EDUCATION [1]

In the modern city we can readily distinguish several hundred vocations —in fact, so far have we proceeded in specialization that it is possible to enumerate more than two thousand distinct callings in the state of New York. The United States "Occupation Census" for 1910 contained more than one hundred and fifty captions, or occupational headings. But many of these—*e.g.*, farmers, clerks, teachers, fishermen, "workers in lumber industries," iron and steel mill workers, shoe-factory workers and traveling salesmen—were not subdivided, notwithstanding that in actual practice each of these groups embraces many workers of very distinctive vocations. In our daily contacts we readily differentiate stenographers, kindergarten teachers, street-car motormen, vegetable gardeners, railway conductors, waitresses, bank cashiers, carpenters, dentists, sea captains, compositors (printing), butchers, candy-makers, coal-miners, pharmacists, and many others. We naturally assume that each of these is trained primarily to do his own kind of work and no other. We observe that in proportion as each becomes a competent specialist his services are increasingly in demand and at higher rates of compensation.

Each adult follows a vocation. Some of these may, of course, be antisocial—as are the vocations of burglar, pirate, gambler, quack, and vagrant. For some no wage may be paid—as in the case of the wife and mother working in the home, the volunteer social worker, the farm boy helping his father. Some vocations may be secondary—as in the case of the farmer who puts in a few months lumbering, or the clerk who plays evenings in an orchestra. The term "vocation," however, does not apply properly to a "side" calling pursued primarily for pleasure rather than profit—whether that be poultry raising by the professional bookkeeper, poetry writing by the physician, or coin collecting by the broker. These hobbies are truly *avocations*—a word often confused with *vocation* by superficial thinkers.

Vocational education of a kind has been received by every adult worker —provided we give a sufficiently broad and entirely justifiable definition to the word *education*. Animals seem to be born with a sufficient equip-

[1] See Snedden, *Vocational Education* (Ch. 1, The Meaning of Vocational Education).

ment of instincts to enable each by himself, and quite apart from example, to learn how to get a living—by cracking nuts, capturing game, collecting honey, sucking fruit. Children nurse and gather edible scraps from the ground instinctively; but they must learn from example and by direction how to use tools, track animals, till the soil, make iron by smelting, sew with a needle, drive a car, or cook food. The vocational ideals, skills, and technical knowledge now used by mankind are a part of our social inheritance, accumulated through thousands of years, and transmitted through ordinary imitation or its special forms organized as direct instruction and training.

THE ECONOMIC BASES OF VOCATIONAL EDUCATION

In order to live themselves and to support those dependent upon them, all men must produce goods and services, which they either consume directly or exchange for the goods and services produced by others. All normal adults thus somehow *work* for a living—always, of course, seeking the most productive, and the least pain-giving, forms of work they can find. Some men find it possible to work by robbing or begging from others. Those persons who have accumulated some possessions that can be rented or hired to others—land, tools, houses, loanable capital—may elect to do no other work than to attend to the hiring out of these income-yielding possessions. In highly organized societies, some persons find it profitable to do their work as writers, entertainers, captains, law-givers, priests, or artists. They are compensated, nominally in money, but actually in goods produced by other workers in return for their own services.

The primary economic basis of the productivity of all work is, obviously, *Mother Earth.* The basic utilities of food, shelter, clothing, and diversion come from the soil, the water, and the rocks, directly or through plants or animals.

The condition of next importance is accumulated mastery of the knowledge and tools necessary to capture and domesticate animals, till the soil, extract metals, erect shelters, and otherwise subdue the earth and its forces to man's ends.

The third condition is found in the social order, which has collectively been produced to assure to man the fruits of his own labor and to make possible the endless transport and exchange of goods that complex societies require.

For most forms of modern production, as the after-consequences of capital-consuming wars disastrously reveal, there are required those pe-

culiar aggregations of wealth which constitute capital and the foundations of credit.

Subject to the foregoing conditions, the productivity of individual workers is dependent upon their individual native abilities, health, and specific working powers. These last rest on foundations of instinct or original nature, but, as found in all but the most primitive of men, they take definite shape from education—that is, from various forms of education as insured by home, participation in work, and the like.

Vocational education has, then, been obtained by all men and women at all times. Often it has been bad, rather than good, vocational training, and frequently it has been insufficient and poorly adjusted; nevertheless all have received it, otherwise they could not have lived. There were roughly some 60,000,000 adult workers in the United States in 1910—perhaps 20,000,000 home-makers, 1,500,000 domestic servants, 12,000,000 farmers and farm laborers, more than 5,000,000 workers in trade and commerce, nearly 2,000,000 in the professions, and some 20,000,000 in mining, manufacturing, transport, and the rest. All these had somewhere and somehow been trained for their work—sometimes by parents, often by foremen, in some cases by vocational schools, and not infrequently by apprenticeship.

The shortages and defects of much of this vocational education now seriously concern the social economist and all others who think in terms of social efficiency.

Vocational education will be here exclusively defined as embracing all forms of control, suggestion, instruction, and training designed to produce competency in some form of productive work. Vocational education should thus be differentiated sharply from those numerous other forms of education designed to increase physical well-being, to improve moral and civic behavior, and to extend the cultural acquisitions of men. Occasionally some forms of this general or liberal education minister also to vocational competency, but that is the exception rather than the rule. It might be claimed that abilities to read and write have vocational as well as civic and cultural values. The latter are, however, so much the more important that they should be regarded as the controlling justifications of education toward literacy.

Vocational education takes its rise partly in the instincts of children to imitate the ways of their elders, and partly in the instinctive as well as custom-directed tendencies of elders to induce and to compel their children or their younger associates to help in work and finally to work independently. It has, therefore, been part of the family discipline of all peoples

at all times to train children for productive work. This responsibility is delegated to apprenticeship and to schools and to commercial agencies only when the task becomes too complex for the home. The conditions under which the family as a whole, including its children, constitutes a productive as well as a utilization unit can be seen yet on any small farm, in many crowded homes, and even occasionally in small mercantile and repair shops, especially as conducted by recent immigrants.

Man doubtless possesses a wider range of instincts and impulses suited to laying the foundations of vocational competency than any other animal species. These are, however, seldom definite or specific, and are dependent upon development and training after birth for their proper functioning. The beginnings of all vocational education, as stated above, are found in the instinctive tendencies of children to imitate the activities of their elders. In a favorable environment of suggestion and example (such as is now rarely found surrounding growing boys and girls), the natural operation of these instincts of imitation may carry one far vocationally. One can believe that boys in primitive societies often became fairly expert hunters, fishermen, nut gatherers, and even warriors, in just this way.

Very early, however, primitive human beings learned the importance of bringing to bear a certain amount of compulsion and direction in the vocational training of the young.[2] Tasks were set and systematic effort for their accomplishment encouraged or required. Where the household unit or the family needs were not sufficient to insure either the right kinds or the right degrees of vocational training, there long ago grew up the system of apprenticeship whereby the youth was more or less formally indentured to an adult skilled worker, who, in return for the services of an assistant, agreed to train the novice. Wherever in the ancient world we find well developed trades we find some form of apprenticeship. For many centuries even such professions as the priesthood, medicine, war leadership, and teaching were recruited through apprenticeship. In the Middle Ages, with their enormous development of handicraft trades and of individualized mercantile callings, apprenticeship developed to an elaborate degree, and was buttressed by extensive bodies of legislation, customs, and conventions. The medieval crafts, mercantile and professional guilds in Europe carried the development of vocational education through apprenticeship to a degree of perfection that is even yet but imperfectly understood.

Vocational schools in nearly all cases seem to have had their origins in

[2] W. J. Thomas, *Sex and Society* (Ch. 4, Sex and Primitive Industry).

private or public attempts to supplement vocational training through apprenticeship by some forms of technical instruction. Apprenticeship in handicraft trades is an exceedingly effective means of teaching the practical skills and other functions of a vocation that have to be learned through imitation and prolonged repetition under personal guidance. In many cases it is a poor means of imparting the technical knowledge upon which, especially in recent years, when science and systematic art have made such enormous advances, many, especially of the higher vocations, have become very dependent. Hence long ago there appeared medical schools, which, taking the apprentices to physicians in groups, gave them, by means of lectures, followed by gradually increasing laboratory practice, the more recently developed technical knowledge which the older practitioners were unable to impart. Colleges of war leadership and agriculture were designed originally largely for those who already possessed substantial amounts of practical experience in these callings, but wished to extend and supplement this by the more complex and up-to-date applications of science which were being made in these fields. Nearly a century ago there were developed in many large cities in America what were known as Mechanics Institutes. These were cooperative undertakings designed primarily to give apprentices and the more ambitious journeymen and masters in the various trades access to organized bodies of all technical knowledge through libraries, and also instruction in mathematics, physics, chemistry, drawing, and other applied sciences and arts, which the available forms of apprenticeship were utterly inadequate to supply.

Earlier "business colleges" and commercial schools only rarely thought of their functions in terms of training in the practical skills directly required in the business vocations. Their functions, it was assumed, were primarily to teach the principles of business and to give such specific training in penmanship, the writing of business letters, and bookkeeping as to enable the future clerk or business man to carry over useful applications from these to his own practice. Engineering colleges to a large extent even yet conceive their functions chiefly as giving their highly selected students mastery of the more technical or theoretical phases of these vocations, leaving the student to obtain practical skills and experience after leaving his institution. Medicine tends steadily to supplement technical training by clinical and other hospital practices. The earlier normal schools in the history of the United States included no practical training in their curricula. They sought to give on the one hand the general culture believed to be necessary for a teacher, and on the other

systematic instruction in the art and science of teaching, leaving a novice to acquire practical experience after entering upon actual work. It may truthfully be said that the large majority of secondary-school teachers now coming from our colleges and universities have also been professionally prepared only to the extent of having acquired a fair general education and some more or less bookish theory of the so-called art and science of teaching.

Occasionally stress of circumstances, rather perhaps than clearly defined intentions, have forced certain types of vocational schools to define their functions more comprehensively. When Florence Nightingale initiated the systematic training of nurses, the exigencies of conducting hospitals required that these schools should take the form of a magnified and highly organized apprenticeship, wherein the novices from the very outset would be required to participate in the "productive" work of caring for patients and assisting physicians. Schools of nursing have therefore long conceived their functions in terms of the complete training of the nurse. Some factories, department stores, and telephone companies have been forced to establish special schools for their younger and less trained employees. Superficially considered, the schools are themselves apart from the productive work for which these beginners are being paid. Fundamentally, however, their instruction and the early participation of learners in productive work should simply be regarded as complementary parts of a total scheme of vocational training.

The general decay of apprenticeship in America and western Europe as a means of vocational education has been primarily due to two causes.[3] The less important is the constantly increasing mobility of labor that followed upon the "Black Death," and particularly on the discovery of America, and in America itself from the multiplying opportunities opening to the westward. For several centuries, now, masters and other employers have found it increasingly difficult to hold their workers to indentures or contracts. Throughout the Middle Ages, it will be remembered, many types of workers were practially denied freedom of migration without the consent of governing authorities.

In America, from the first days of colonial settlement, the West has always beckoned the more restive and dissatisfied workers from the eastern shores and even from Europe. As a consequence, even in colonial days apprenticeship never was a well developed or consistent means for the vocational education of any substantial number of workers.

[3] See O. J. Dunlop, *English Apprenticeship* (London, 1912), (Ch. 6 and 14).

A second and far more important cause, however, has been the substitution of power-driven machinery for handicraft tools. The introduction of power has necessitated large-scale organizations of nearly all forms of production that could be concentrated at central points. Only the building trades have during the last hundred years been able to preserve their dispersed character, and it is in these that some forms of apprenticeship persist strongly to this day. Power production has developed very few well marked systems of apprenticeship. Perhaps the best known is due to the incidental circumstance that a locomotive has seemed always to require both a driver and a stoker. The latter not only aspires eventually to be an engineer, but he holds such a position in relation to the engine and to the locomotive driver that in the course of a few years he acquires at first hand almost all the knowledge and skill essential to the engineer's position. In this field of work, therefore, we have the conditions under which apprenticeship has always flourished. First, the work must be of such a character that the master worker is individualized or given a task more or less by himself, and in which he needs only one helper. Historic apprenticeship has always been at its best in the paired relationship of master and assistant. Under these conditions a maximum of friendly coöperation is likely to develop, and the various intimacies of joint work give thoroughness and the sense of responsibility to the learning acquired by the apprentice.

Power production renders inexpedient the individualization of the work of masters, except in rare instances.[4] It necessarily entails a large amount of regimentation. For economy's sake, dozens and sometimes hundreds of workers, all with substantially equal powers, must be grouped together, usually under a foreman. The distribution of power, routing of materials upon which work must be done, and supervision, necessitate company or gang foremen even of the novices in productive processes. Under these conditions, anything like the old effectiveness of the "paired" apprenticeship relation is found to disappear, and in fact it has disappeared to a large extent in all modern industrial areas. The name "apprentice" is preserved, but it is applied to helpers or minor operatives who are assumed to be in process of advancement. Rarely, however, does the term now cover any factory processes in systematic training of novices toward higher forms of skill and technical knowledge. Apprenticeship still survives in some shop industries, largely owing to the conserving influences of trade-union organization. It is hardly found

[4] See A. Pound, *The Iron Man* (Ch. 7).

at all in the commercial world, and only in atrophied forms in mining, navigation, food packing, and the more highly subdivided processes of machine production.

The relation of vocational to general education will continue for some time yet to furnish many trying problems to educators, largely owing, of course, to unenlightened public opinion and to hardly less unenlightened academic opinion regarding the real significance and character of vocations and of training for vocations.[5] Many persons believe yet that in some mystic way general education contributes to vocational proficiency. It may do so, of course, in a very few vocations and under some uncommon conditions. The only road to clear thinking here is through "job analysis" of particular vocations, confronted by equally specific analysis of the objectives of the studies constituting liberal education. One can, for example, analyze the various components of the proficiency characteristic of high-grade barbers or carpenters or poultry farmers. Against the factors thus discovered he can place the results expected to accrue from the study in schools of general education of music, American history, and civics.

Carefully conducted analyses of the kind here suggested will easily convince the more skeptical that there can be no inherent connection in general between efficient training for a specific vocation and efficient education for the cultural, civic, and health necessities of modern life. Such processes of analysis will speedily develop the exceptions to the general principle enunciated. For example, certain easily recognized proficiencies in handwriting become obvious assets in the bookkeeper's vocation; certain parts of trigonometry and other high-school mathematics function later in engineers' vocations; training in spelling beyond ordinary standards may well become an asset to the stenographer; and some biology can be made to function in the study of medicine. Taking the rank and file of vocations, however, and the ordinary cultural studies, the general principle stated above seems to hold true. The ultimate values of so-called liberal or humanistic studies must, therefore, be determined by reference, not to vocational success, but to the objectives of health, approved social behavior, and general personal culture, for the promotion of which they are designed. Equally, the validity of objectives and the effectiveness of methods in so-called vocational schools must be determined with reference to standards of productive efficiency in particular vocations, either immediate or remote, which are finally realized.

[5] For an opposed point of view consult C. H. Henderson, *Pay Day.*

Vocations for mature workers are, under modern economic conditions, rarely the same as those for immature workers. The social ideal has always been an early entrance upon, and prolonged steady advancement upward, in the vocation which one follows for life. Holders of this ideal some years ago dubbed the great majority of juvenile vocations, especially as these are found in cities, as "blind-alley" or "dead-end" vocations. In one sense the characterization is true, but in another it is most unfair. It is the inevitable tendency of specialized production to departmentalize workers, both vertically and horizontally. It follows that the great majority of vocations that are suited to young workers are not, or should not, be suited to adult workers. It therefore follows that very frequently the years spent in a juvenile vocation give results in training and technical knowledge which may not be at all functional in the vocations later to be followed.

By far the most conspicuous of all the transitions found in the modern economic world is that made by young women workers from the multitudinous wage-earning vocations that they follow prior to marriage to the home-making vocation normally entailed on them by matrimony. Frequently the juvenile vocations followed by these persons give no assets toward home-making. It is a widespread theory of social workers that the teacher and the trained nurse bring to the care of the family invaluable assets. It is also generally held that young women who have been employed in business callings carry forward a variety of appreciations and knowledge that can function importantly in the vocation of home-making. Whether the same thing happens to any considerable extent in the case of girls who have been employed in the numberless factory processes of our large cities may well be questioned.

A large majority of boys, electing or compelled to become self-supporting at from fourteen to seventeen years of age, are obliged to take up vocations as helpers in commercial or industrial establishments. Sometimes the experience there obtained is definitely functional in the more remunerative adult vocations to which they are later advanced. In many cases, however, there may be no such interdependence. Even a superficial analysis of many of the vocations found in any large city—like those of policeman, fireman, stationary engineer, chauffeur, and hundreds of others—will show that only after having obtained considerable maturity are men considered fitted for admission to them. All of the workers in these fields have usually filled other vocations during their juvenile years of wage-earning work.

These considerations lead to certain very important conclusions re-

garding the desirable and practicable place and scope of publicly supported vocational education in the future. That a society bent upon lessening human waste should provide specific vocational training at the outset for juvenile workers would seem to be a foregone conclusion. It is not, however, so generally realized that probably in the great majority of cases such training could be very effectively accomplished within the space of from four to sixteen weeks on an eight-hour-a-day basis, that is, of from two hundred to eight hundred hours of concentrated training.

"Upgrading" schools are no less important—that is schools for advancing workers from the status of juvenile employees to that of adult employees as maturity is reached. Even in the middle years of life opportunities for upgrading vocational education should be provided. For example, the great majority of foremanships, as well as many other responsible positions, can be entered upon only when the workers have attained to an age of from twenty-five to thirty years of age. Men to be advanced to these positions are, naturally, selected from among many workers on acount of personal fitness. It is the growing conviction of employers and students of vocational education, however, that substantial amounts of quite specific vocational training for their new callings could very profitably be given to these candidates for advancement.

Evening schools and correspondence schools are now the chief resources of persons thus seeking to advance themselves. Both of these types of vocational training are of very doubtful efficiency when contrasted with the possibilities of concentrated specialized training, reinforced by supervised participation in productive work on an eight-hour-a-day basis, and taking all of the learner's time for from anywhere from four to fifty weeks, according to the complexity and importance of the new vocation.

Democratization of educational opportunities demands the extensive development under public support and control of vocational schools. At the present time, that youth who combines prosperous parentage with good native ability finds open to him, upon completing his general high-school program, a great variety of publicly endowed and private vocational schools—such as those of theology, law, war leadership, medicine, dentistry, pharmacy, agricultural leadership, engineering, and teaching. On the other hand, the youth from an unprosperous home, and handicapped by inferior mental ability, finds open to him on completing the elementary school, or even after two years of high-school work, virtually

no opportunities whatever to procure effective vocational training for the callings among which he must make a choice. The result is, as stated earlier, that more than 90 per cent. of all the adult workers of America have attained to such vocational proficiency as they now possess through the wasteful and hazardous methods of "pick-up" vocational education, and with virtually no aid whatever from vocational schools or apprenticeship—truly a far-reaching denial of democratic "equality of opportunity."

Elementary and secondary schools throughout America now conform largely to democratic ideals in that they are available to all of requisite ability, and are free of cost to rich and poor alike. Lest inexperience or selfishness should operate to deprive a child of his educational rights, school attendance to a reasonable age and degree of scholastic attainment is made obligatory.

It is only when we come to the field of vocational education that we find, as yet, almost a complete failure even in the formulation of democratic ideals. As respects education for vocational efficiency, America still enforces on its children that most undemocratic of all ancient maxims: "To him that hath shall be given, and from him that hath not shall be taken away even that which he hath."

What we recognize as the contemporary "movement for vocational education" needs, obviously, to be given clearer definition than has commonly been done—and in terms of the distinctions noted above. It *is not* a movement for more vocational education in those fields where fairly good and numerous schools now exist—law, theology, stenography, medicine, and the other relatively aristocratic vocations. It *is* a movement to provide vocational schools for the vocations heretofore neglected in our, at present, undemocratic system. It represents a social movement to substitute purposiveness for chance, system for hit-or-miss in one very important department of "education for life."

This movement aims to help "industry" (including farming and other fields of work) by producing better workers. It aims to help the state by giving it better producers. But, above all else, it aims to help the youth of the land to find their work and to prepare for it without all the hazards and ineffectiveness of "pick-up" methods.

The multiplication of vocational schools will unquestionably soon follow upon general appreciation, first of the wastefulness of "pick-up" methods of vocational education, and second of the cruelly undemocratic attitude of society in this respect. There is no reason why America should not possess many hundred, if not indeed several thousand, va-

rieties of vocational schools. It is very easy to-day to list more than two thousand distinctive vocations now recognized by census enumerators in the United States. When such highly composite categories as "clerks in stores," "teachers," "salesmen," "farmers," "machine-shop operatives," "coal-miners," shall have been properly analyzed into the actual constituent vocations, it may be that the number of easily recognizable distinctive functions pursued by the sixty million adult workers in America will amount to more than five thousand.

It would be obviously ridiculous to assume a wide distribution of each type of vocational school. At present there are in America about one hundred medical colleges; there are fewer than that many agricultural colleges; and there is only one West Point and one Annapolis. This method of distributing vocational schools must more or less prevail with respect to all vocations. It would be childish, except in such widely distributed vocations as home-making, and perhaps, in some areas, specific types of farming, to expect to bring vocational schools near to the homes of widely distributed candidates for training.

On the other hand, it must be recognized that many of our industries tend to concentrate in a few centers, and in these several types of specialized vocational schools could economically and efficiently be conducted. Half a dozen kinds of technical schools of paper making could well center in Holyoke, Massachusetts. There are said to be more than a hundred distinctive vocational processes employed in the making of shoes. If it should eventually seem important to provide specific training agencies for each of these, an aggregation of these schools could very properly be established in Brockton or Lynn, Massachusetts. We may yet see more than a hundred distinctive schools in the various processes of automobile manufacture located in Detroit; and a score of schools of clothing manufacture in New York City. This city could also easily support two or three dozen specific types of schools of indoor salesmanship respectively for shoes, groceries, insurance, builder's hardware, and books.

How can we determine whether, in a given field of work, it is desirable that school vocational methods of training be substituted for apprenticeship or "pick-up" methods? In exactly the same way that in the past it was determined to substitute medical colleges, normal schools, schools of dentistry, professional training of nurses, and schools of journalism for less effective methods.

We can ascertain by careful study, for example, how far "pick-up" methods of training for any species of farmer, home-maker, factory

operative, or miner now prove wasteful, in the first place, to the individuals seeking to serve in these callings. In the second place, we can ascertain how well or how badly society at large is served through present methods.

Close study of the kind here suggested will conclusively prove that there are to-day literally scores of fields in which neither schools nor effective apprenticeship are found, and in which existing "pick-up" methods are a fruitful source of misfitting, of chronic discontent, of permanently lowered efficiency, and of prevailing absence of "pride in workmanship."

What will be the general characteristics of good vocational schools? There are, as has been noted, certainly more than two thousand distinctive vocations found in the United States. These are endlessly varied. Vocational schools for them must likewise be exceedingly variable. In some the term of training may have to extend over several years; whilst in others only a few weeks may well suffice. In some, much useful work can be done on an "extension" basis; in others, full-time work will be the most economical.

Some futile talk is now indulged in relative to bringing vocational schools into each town and city. But it must often happen, as it now happens in the case of professional schools, that only one or a few can be provided for a whole state. It will not prove practicable to bring the mountain to Mohammed; he will have to go to the mountain.

A few things are now certain as to the pedagogy of vocational education. In every field it must build through and on practical experience of the most realistic sort. Even vocational-school men have heretofore tried excessively to teach people to swim without going near the water. The best schools now—nursing, farming, dentistry, and others—tie up closely with "productive work." That is the road of soundest evolution for all

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CHAPTER IX

SOCIAL EDUCATION: SOCIOLOGICAL FOUNDATIONS

INTERPRETATIONS OF EXPERIENCE

THE experience of each one of us with social groups proves the numberless needs of social education—that is, of the various kinds of moral, civic, and religious education—which promote friendly and co-operative relationships between us and the other members of our large and small community groups. Sociological studies all emphasize that need. Social groups, from the family to the nation, from a village party to an international church, may succeed measurably in *coercing* their members into some sort of union and joint effort—but the process is expensive and precarious, as the history of all arbitrary control and domination proves. Far more effective and far more in accordance with the ideals of democracy is education for good group membership—provided we know how to carry on such education.

In one form or another, social education is, of course, found everywhere now. Every older child in the family group helps in the social education of his young brothers and sisters. Every natural leader, from five to eighty years of age, is incessantly contributing to the social education of those whom he can influence. Church, club, trade union, and political party are all to be included among the active agencies of social education.

But all of these informal, even though vigorous, forms of social education fall far short of the needs of the complex societies of to-day. As shown in other chapters of this book, the modern world, both in its fully civilized and in its partly civilized areas, has developed numberless interdependencies extending over wide areas and capable even of affecting generations yet unborn. We are apt to think of these interdependencies in political or economic terms, because these are the most tangible and visible; but in fact most of them lie far deeper. Culture, religions, family life, and the spirit of fellowship are all being profoundly affected. Hence the need for more systematic, far-reaching, and purposive social education. The already rich experience of each one of us makes readily possible the kinds of interpretation suggested by these questions:

1. What are the educative means by which children are "socialized" within the family group? Discuss separately the ordinary means of producing various specific forms of: coöperation and mutual aid; truthfulness; reliability; decency and order.

2. What are some of the means by which adolescent members of the neighborhood are socialized? Discuss various specific forms of social pressure, training, and penalization against: theft, destruction of property, untruthfulness, obscenity, lack of coöperation in emergencies, general disorderliness.

3. Of what means have you read by which the recent entrant into vocational groups is disciplined to the group standards? Separately consider groups of: sailors; employees in a bank; labor unions; scholars in a college; soldiers.

4. Sociability groups are very often exclusive. Explain justification for this, first in their desires to procure only those who can most completely reciprocate the values of fellowship, and, on the other hand, in their desires to exclude unharmonious individuals. What are various processes by which members, tentatively accepted into fellowship groups, are more adequately shaped to the standards of these groups? What qualities or appreciations of value in individuals are most powerfully appealed to in the processes? Explain, in terms of socialization, popular fears, at least among certain classes, of being thought: odd; dishonorable; unfaithful; ignorant of the "right way to do things." Show how these and other forms of sensitiveness are easily enlisted in procuring social conformities. Are the social conformities thus procured always or commonly "good for society in the long run"? Give examples of striking exceptions. How do you define: conscience; respect for Mrs. Grundy; "honor" as the adolescent young man feels it; "honor" as the aristocratic soldier feels it; "honor" as the middle-aged woman of prominent social position feels it; and "honor" as the trusted banker feels it?

5. What are the reasons for the pronounced difficulties of obtaining (*a*) economic coöperations, (*b*) dispositions to render full justice, and (*c*) fellowship, as between different social groups representing: quite unlike vocations; different races; different educational or sumptuary levels; different sexes; different ages? What are some of the means that modern education is employing to overcome various historic antagonisms between these several groups? Is it always desirable that such antagonisms should be reduced or abandoned? Why?

6. Does it appear to you that competition or antagonistic relationships usually exist in the plant world, either between different species, or between individuals of the same species? Do trees compete for soil, space, and sunlight as fiercely as do primitive human beings? Do animals tend to multiply in such ways that the weaker are perpetually being driven to the wall and that only the stronger survive?

7. Can you interpret human tendencies toward group formation as simply one means of survival? Does the strengthening of the group life in one

people tend to endanger even the existence of another people that makes less progress in developing strong group organizations?

8. Can you, therefore, interpret processes of socialization primarily as means of insuring more extensive and more prolonged security, better health, more wealth, fuller justice, and the like?

9. Analyze some of the difficulties encountered in holding several million people together in the compact social grouping known as a nation. Contrast these difficulties in times of peace and in times of peril from other nations. Analyze the various means that social groups have adopted for the inculcation of patriotism. Consider separately: flags; patriotic music; painting; memorial monuments; festival or commemorative days; the leadership of kings, commanders, and other superiors; and, finally, alleged divine blessings on national aims. Recall historic instances of struggles for nationality by the United States; Poland; Ireland; Greece; the Confederate States; and the Philippines. Why should people "love" their nation, but not an international group?

10. What are some of the effective means now used by churches for social education?

11. Give sociological interpretations of the vendetta or feud, and show why the state must sternly repress that form of securing justice.

SOCIAL EDUCATION DEFINED[1]

Social education should be so defined as to include all purposive adjustments of an educational nature whereby individuals are fitted for more effective group participation. A large proportion of these educative processes are carried on by other than school groups. The numberless varieties of family discipline are chiefly to be interpreted as manifestations of social education. So also are the varied means by which, on playground and in neighborhood life, children from one to eighteen years of age are shaped by others of their same age and sex through coöperative play and other activities. The chief minor function in any religious congregation is the social education of its members. Every form of economic coöperation is in greater or less degree accompanied by the purposive educational adaptation of the younger or lesser influential members to the standards set by the old or more influential. The various historic processes of moral training and of civic education are to be evaluated as parts of social education.

The instinctive foundations of group life are especially manifest everywhere among children, but can also be deciphered in all adult groups.

[1] See D. Snedden, *Civic Education*.

Some of the strictly social instincts, such as sociability, friendship, sympathy, pity, generosity coöperation, love, maternal affection, and the like, are readily manifest. Others are more composite and obscure, such as the various species of the sentiments of loyalty, patriotism, philanthropy, and domination, which undoubtedly have their roots in the "original nature" of man. For the practical purpose of education, it is essential to realize that the various social instincts furnish merely the raw materials and initial impulses whereon education must build. Very rarely, indeed, are social relationships, established on a purely instinctive basis, adequate to the needs of civilized life. One of the most deep-rooted social instincts is maternal affection; yet uneducated maternal affection forms an exceedingly poor foundation for the upbringing of children under contemporary conditions. The social instincts that draw together young men and women are deep-rooted, but in an uneducated form they provide for insecure foundations for modern family life. No less in need of education are the individualistic instincts of jealousy, envy, rivalry, and pugnacity, which usually require drastic transformation, if not indeed repression, in order that the possessors may be adjusted to the requirements of the complex coöperations which civilized life calls for.

The major varieties of social education are moral education, civic education, and religious education. These overlap to some extent. Nevertheless the central fields of each are fairly distinct, even where some relatively abstract social "virtue"— *e. g.,* loyalty, coöperation, good will, or love—is valued under that name in each. The determining purpose in every case is to render the social groups more effective—for their collective ends, and also as means to "life more abundantly" for the individuals composing them.

The aims of moral education are determined largely by the requirements of "small-group" life.[2] Under historic conditions, other agencies than schools have been chiefly responsible for moral education. Each such agency, as the home, the neighborhood community, the church, the boys' gang or clique, the police power, and the vocation, has undertaken to train its members in the specific varieties of orderly behavior, truthfulness, property honesty, industriousness, loyalty, chastity, and temperance that seemed appropriate to its needs. The ultimate blendings of the various ideals, insights, habits, and appreciations thus produced in a normal environment commonly sufficed to produce what might properly be called "well rounded" moral character. Every school group—including

[2] See suggestive analysis in C. E. Rugh, *Moral Training in Public Schools* (Boston, 1907).

authorities and followers—rigorously disciplines its own members toward effective participation in school-group life. Such virtues as orderly movement, abstinence from interfering speech, modest deportment, strict truthfulness in oral and written statements, and due regard for the school property of others, have always been rigorously striven for because of the disastrous effects on the work of schools if other courses were permitted. Incidentally, all schools, but especially those consciously serving the larger purposes of religious and political organizations, have attempted to instill *general* ideas and ideals of morality. Under the almost completely authoritarian social controls, both of a political and religious nature, that prevailed throughout Europe during the Middle Ages, and that have been persisted in in one form or another down to the present day in Prussia, many of the problems of moral education in schools were comparatively simple. The gradual abandonment of authoritarian control has multiplied the difficulties of general moral education under ordinary school conditions. Problems of moral education in schools, as respects both aims and methods, are incessantly debated among educators everywhere; but, like Mark Twain's reference to talk about the weather, "little is ever done about it."

The fact is, of course, that, even under the most favorable conditions, by far the major portion of the moral education of young people, and especially those under ten or twelve years of age, must be effected through other agencies than schools. If and when the school is to function in this matter at all, it is clearly in a residual capacity. Until, therefore, the minor and complementary functions of schools in moral education are more clearly defined than they are at present, it may well be doubted whether anything can or will be done about it.

Civic education, meaning thereby adjustment to the large federate or secondary groups that society forms, presents conditions far different from those attending moral education. Here the effective educative functions of non-school agencies are relatively small. It may well become a primary function of school and college in the future to define objectives of education for citizenship which shall far transcend in importance and purposiveness any such education that may be effected through non-school agencies. It is this ideal that gives momentousness to contemporary proposals for the further evolution of civic education.

Religious education is designed primarily to produce the right social relationships between man and deity. Religious interpreters give concrete expression to ideals and standards of conduct which, it is believed, are in harmony with divine will. Naturally, these standards, under the influence

of socially wholesome religious systems, reflect the loftiest social aspirations of which men in considerable numbers are capable of conceiving. State or public schools seem to have diminishing functions in the field of religious education, wherever denominational rivalries are acute.

CITIZENSHIP FROM THE SCHOOL OF LIFE

All men and women constituting the large and small social groups of America are now citizens in some capacity. The vast majority are fairly good citizens as respects many civic virtues—especially those of civic conformity. They are also fairly good citizens when very specific demands for civic "initiatory" virtues are made—either by so concrete a situation as the call to a defensive war, to the relief of a famine- or earthquake-stricken distant region, or to a war of independence or a war for the liberation of slaves where a good case for such war is made out by competent leaders.

We must assume that, by reasonable standards, the controlling majorities of Americans in the various colonies in 1776 were moderately good citizens (though it is doubtful whether they *averaged* a third-grade school education!) The men of 1861 who took up arms for the defense of the union or for "states' rights" were in the main good citizens (though they too, probably, averaged something less than our fifth grade in schooling). And surely none of us will impeach the fundamental good civic intent of the millions who in 1917 defended our public interests, even whilst the threatened dangers were still afar off.

But these citizens owed most of their civic education to other agencies than schools—even though the latter had assured at least such essential foundations as literacy and a partial knowledge of essential geography and American history. "Life," as we sometimes vaguely put it, had done much to make them good members of their colonies or states, their religious denominations, their political parties, their nation. That life meant, at the base, membership in fairly good families; it meant freedom of association with better—and worse—men than themselves; and it meant freedom and opportunity to own property, to roam, and to acquire through numberless channels the ideals, aspirations, appreciations, and insights that constitute "Americanism" in the best sense of that much abused word.

Good conservative citizenship, it is often alleged, has been a prevailing contribution of our landowning farmers. Everywhere among us we also recognize business men's organizations, artisans' organizations,

women's clubs, and racial groupings that attest to ability of our societies to educate men toward citizenship with only moderate aid from schools.

It is, of course, a sociological commonplace that in any class group, or other aggregation, some are good, some mediocre, and some bad citizens, when measured by any standard we may elect to employ. The critical test is found in the proportions of each. Owning farmers are commonly ranked high as citizens, not because there are no murderers, defaulters, or bribe-takers among them, but because these are not sufficiently numerous to corrupt the whole. Certain groups of recent immigrants are not devoid of public-spirited, democratic leaders; but such immigrants may invite public disesteem because they produce so little of this leadership that its presence can hardly leaven the mass.

CIVIC SHORTAGES

What, then, are the shortages in American citizenship of to-day, or probably to be expected in that of the next generation, which justify demands for better civic education in and through schools? These do not admit of ready diagnosis, once we leave behind us the easy paths of aspiration and naïve generalization. First, we need to ascertain current changes in demands on civic virtues; second, the various kinds of civic virtue require analysis and evaluation; and third, particular "case-groups" of citizens must be studied. The complexity of the problems involved can best be exhibited through an illustrative example.

Owning farmers of the Northern Mississippi Valley states, omitting those of foreign birth and confining ourselves to those over thirty-five years of age, may be found to constitute a "case-group" of manageable proportions. A sociological student of this group would probably report these farmers as being prevailingly law-abiding, property-respecting, and patriotic. They favor such public utilities as courts, schools, roads, food inspection, and quarantine, but it is alleged that their standards for these utilities are excessively economical and low, growing out of their own hard struggles to acquire economic independence.

From the beginnings of settlement of these regions, the farmers have felt the pressures of certain economic forces to degrees almost unprecedented in American or even European history. Until very recently (and even yet in times of crop movement) they have been a heavy debtor people, owing money on mortgages to Eastern lenders. Second, their markets lie at a distance, involving not only great difficulties of transport,

but opening tempting opportunities to railroads, packers, and commission merchants to form predatory monopolistic combinations.

In large economic matters these owning farmers have often been bewildered, suspicious, and easily deluded by political will-of-the-wisps. They do not to-day greatly favor "greenback" currency, free silver, or government ownership of railroads, having lost faith in these once cherished panaceas. But, under the pressures of hard times, high prices, or other difficulties, they again seem to flounder in the bogs of economic uncertainty. Their more disinterested advisers preach "coöperation" to them incessantly— coöperative buying, coöperative marketing, coöperative ownership of the more expensive farming machinery, coöperative packing. But these farmers respond slowly and reluctantly. Often they have little confidence in the technical experts whom they must employ. In other words, though modern economic conditions have forced these farmers to buy from distant markets and to sell to even more distant ones, they are poorly educated, as yet, in matters of "large-group" economic performance. Perhaps this is their most conspicuous "prevailing" civic shortage.

Can courses in school civic education be devised that will somewhat remedy this defect in the next generation? Undoubtedly, though the process will not be simple. But we now force or induce many of the sons of these farmers to study algebra and plane geometry. The concrete problems of every-day economics are not more complex than large proportions of the silly and irrelevant problems we find in our mathematical textbooks.

The training of the prospective voter is a large part, but by no means all, of properly defined civic education. What is voting, and what kinds of demands does it make on the individual? Right dispositions, right understanding, and right industriousness are obviously needed. What do these actually mean for the several levels of intelligence, vocational engrossment, and social experience found among our various citizens? We have almost no scientific knowledge as yet.

Year by year grows the complexity of the issues upon which voters must pass judgment, or delegate the passing of judgment to their representatives. Amendments to state constitutions are now frequently submitted. Municipal, state, and even national elections involve far-reaching issues that only incidentally follow lines of party cleavage. Is it to be expected that schooling can make voters of various levels of intellectual and moral ability "competent" to pass judgment on these? In one way or another, obviously, that is a problem for democracy.

Can a democracy so train its voters—as stockholders in the great civic corporations of county, municipality, state, and nation—either (*a*) to rely upon their own wisdom where issues are simple, or (*b*) to choose and follow expert advice where issues are involved? If it can not do so, it is doubtful whether "large-group" democracy can persist.

But these ends are now practically realized in other fields where problems become difficult. Even the moderately well educated man to-day (*a*) relies upon his own knowledge in preventing and curing minor physical ailments; but (*b*) he consults expert specialists when he has reason to suspect that eyes, appendix, or digestion are threatened. Every citizen once possessed enough of all available technical knowledge necessary to make safe decisions in the road-paving issues presented to him. Now he may still decide for himself as to the paving of the private paths near his house, but he employs engineering experts to select materials and lay the paving of automobile highways.

UNSETTLED PROBLEMS

We may well expect civic education, in theory and practice, to make rapid progress during the next few years, owing to the keen appreciations of its values that now exist, and the wide vistas of its opportunities that are rapidly being opened up. But it is important at the outset that we recognize the various unsolved problems that still exist in this field. Here, as elsewhere, in determining educational objectives, we are sadly in need of more accurate terminology. We shall also need constant reference to concrete case-groups if we are to avoid excessive abstractness.

The words "citizen" and "citizenship" seem almost hopelessly elastic for present purposes. Certain legalistic uses of the terms are greatly at variance with popular usages. Under some conditions, the words "good citizen" seem to include all the qualities commonly comprised under the words "good man." In other connections, the phrase denotes social qualities almost exclusively of a political nature. In any group of educators, or others interested in social phenomena, problems like the following will provoke many unlike interpretations:

a. Is training in penmanship an essential part of education for citizenship?

b. Should instruction in hygiene be considered a part of education for citizenship?

c. Can a person who does not know how to read be nevertheless a "good American citizen"?

d. Should the study of Latin or of medieval history be expected to contribute to good citizenship?

e. Are the following statements necessarily more or less self-contradictory?

(1) Smith is a good farmer, but a bad citizen.

(2) Jones is a thoroughly dishonest and untruthful business man, but he is a good citizen, nevertheless.

(3) Mrs. Brown is a model wife and mother, but a bad citizen.

(4) Mr. Black is a notoriously immoral man, but a good citizen.

(5) Old Joe, the negro, has excellent health and is a most faithful worker, but he is a bad citizen.

(6) James, fourteen years old, is an admirable son and pupil, but a negligent and unsatisfactory citizen.

(7) Pemberton is one of our admirable citizens. He works hard, looks well after his family, never gets into debt, never takes any part in politics, church affairs, or trade unions, and he attends strictly to his own affairs.

(8) Many of our recent immigrants are God-fearing, industrious, and law-abiding, but they are far from being good citizens.

f. To what extent are these affirmations unsound?

(1) Trade education is well enough in its place, but it contributes nothing to good citizenship.

(2) Why spend public money teaching French? A man who reads French is no better citizen than one who does not.

(3) We teach hygiene for the sake of the individual himself, but not for the sake of his citizenship.

(4) Teaching arithmetic will probably help an individual in his strictly business relationships, but these have nothing to do with his citizenship.

(5) Teaching our boys to be fond of good fiction is good in its way, but it has no bearing on education for citizenship.

(6) Most of our great artists, inventors, and scientists are indifferent, if not bad, citizens.

g. A man's social relationships and responsibilities are often conceived as of two classes or orders—"private" and "public." A resulting implication is that his citizenship is to be judged on the basis of his "public" attitudes and actions. Can we properly hold that:

(1) A man's care of his health is a private affair and has no bearing on his citizenship, except when he becomes an actual or potential source of contagion or infection?

(2) A man's treatment of his children has no bearing on his good citizenship, except as he sets a public example that is likely to be imitated?

(3) Whether a man works hard or loafs is his own affair and has no bearing on his qualities as a citizen, as long as he does not make himself dependent upon others?

It is probable that popular usage has made of the word "citizen" a term almost, if not wholly, inclusive of all good qualities—absurd as that may seem. The term "good citizen" is practically synonymous with "good man," "socially efficient" man (or woman, or child). "Education for citizenship" may therefore be taken to mean what education of all kinds has always meant—education for manhood, for useful service, for culture, for health. For purposes of making useful distinctions among educational objectives or procedures, we may have to abandon the term *citizenship* altogether, leaving it to the aspirational writers and speakers.

The words "civic," "civics," and "civism" are, on the other hand, sufficiently free from embarrassing connotations to be well adapted to educational discussion. Civism should be used to denote "devotion, adherence, or conformity to civic principles." Civics denotes the studies of civic rights and duties, that is, those that pertain to "large social groups," especially in their more political aspects.

The words "social," "moral," and "civic" are defined elsewhere, but some of their further applications need consideration here. *All* relationships between or among human beings are *social* relationships. Devotional relationships between men and deities—postulated as possessing "manlike" qualities—are also included as social, thus giving three fundamental, and in large measure mutually exclusive divisions—moral (or small group), "civic" (or large group), and religious. Numberless subdivisions of social qualities can be made—marital, fraternal, parental, communal, economic, sociability, convivial, political, patriotic, etc.

Moral education aims primarily to make man fit for his small-group relationships—family and associate groups. Civic education aims primarily to make man fit for his large federate group relationships, of which the political groups—city, state, nation—now receive chief consideration. Religious education is designed to insure right relationships between men and deities.

Federate groups are made up of constituent or component associate groups. Therefore good federate membership often implies good associate membership in the component groups.

Some federate groups—religious denominations, vocational unions, cultural associations, political parties—are exclusive in their membership. These require for good federate membership only good associative membership in related or component groups. Hence a man may be a good

soldier, business man, or club man, even if he be otherwise a bad father, a quarrelsome neighbor, or immoral person.

But other federate groups, including city, state, and nation, are inclusive; hence the sum total of virtues required for them includes the individual's associate (neighborhood or folk) membership in the community. Here, therefore, he trails behind him all his qualities, individual and social, from his smaller groups.

Citizenship is not considered primarily with reference to vocation; but the vocationally unfit man is to that extent a defective or bad citizen. Personal health, personal culture, personal thrift, and personal fighting powers are not primarily the objectives of civic training; but, to the extent that the citizen lacks right qualities here, he fails of being the most serviceable or tolerable citizen.

So with associate and exclusive federate group membership. Good citizenship requires the man to be a good son, husband, father, union man, church man, club man, political party man, to the extent that these group memberships make him in any way better.

Individual education aims, therefore, to make the man healthy, vocationally competent, and culturally strong in himself, the whole being of course given a social setting of ideals and insight.

Moral education aims primarily at the family and associate group virtues, with only incidental reference to virtues of individualistic character.

Civic education aims primarily at associate and federate community group virtues, with only incidental reference to individual family and exclusive association and federate group virtues.

Until psychology shall produce a more serviceable terminology descriptive of the distinguishable qualitative elements in social virtues and vices, much use will have to be made of the following terms as indicative of certain classes of social qualities: instincts, appreciations, aspirations, knowledge, particular habits, general habits, ideals, and powers.

These terms obviously overlap, that is, the qualities denoted merge in a measure into each other. In some cases the terms are not strictly correlevant. But within the focal areas of the numberless specific qualities roughly denoted by each term are many, if not a majority, as to which there is little confusion among practical thinkers.

The term "social instincts" should be used to cover all qualities, including impulses, usually recognized as part of the "original nature" of man (as opposed to acquired or learned reactions).

The term "social appreciations" is intended to be restricted to valuations in which large feeling elements are found. Social tastes, prejudices,

likes and dislikes, affections, and antipathies are included. Obviously the qualities signified often shade into general habits (attitudes) on the one hand, and into ideals, desired goals, approved standards of aspiration on the other. When valuations become largely intellectualized and devoid of feeling elements, they may correspond with social knowledge (*e. g.*, of right and wrong, the clear-cut dictates of conscience).

The term "social aspirations" covers qualities in which desire is the dominating element, valuation, ideal, and knowledge being relatively faint.

The term "social knowledge" will be used as nearly synonymous with social insight, social intelligence, and social understanding. By implication, feeling elements are here faint, and appreciations, when they are present, are strongly rationalized.

"Particular social habits" will include definite manners, habits. reactions to specific conventions, conformities, etc.

"General social habits" will include attitudes, prejudices, etc.

"Social ideals" is to be used, in a somewhat restricted sense, as including all fairly well defined desired goals of social effort, the dominant factor being clearness of objective.

THE SOCIAL SCIENCES

The social sciences include all those dealing primarily with human relationships—ethics, economics, politics, civics, anthropology, ethnology, criminology, theology, genealogy, social psychology, sociology, educational sociology, rural sociology, etc. History in its various aspects—world history, English history, industrial history, the history of banking, etc.—is here included as of the social sciences, it being assumed, however, that the non-historical (in the broadest sense the "natural") sciences are designed primarily to determine general principles and natural laws, whilst the historical sciences are designed primarily to record and report accurately the "event," the unique occurrence.

Sociology is defined as the inclusive social science, of which all other social sciences are specialized divisions or *liaison* departments. Sociology seeks to discover, classify, and interpret *all* the essential facts of human group relationships. Social psychology, medical sociology, or even economics could be interpreted as *liaison* departments, since each includes social interactions with non-social situations.

The "social virtues" designate approved qualities, as these tend to express themselves in what is believed to be good social action. The "social vices," similarly, are disapproved qualities, tending to express themselves in bad social action.

Naturally, virtues and vices may consist, in given cases, chiefly of habits, of ideals, of appreciations, etc. But the *psychological* compositions of virtues and vices are chiefly of interest to those who seek to deal with them constructively (or educationally)—officers of the law, agencies for the relief of dependents, employers, educators, and the like. These workers find that virtues and vices often have their sources far back in heredity or the "nurturing" effects of early environment; that, at any given time in the life of the individual, the character of his aspirations, appreciations, and ideals (as sources, or at least indices, of social motive power or desire) may have a largely determining part in the character or degree of his virtuous or vicious practices; that at other times his range of habituations may be dominant factors; and that under still other circumstances the presence or absence of right social knowledge may be determining.

The adjectives "conformist" and "initiatory" may well be used to include respectively the virtues of submission, and the virtues of antagonism or revolt toward specific external controls or limitations. The conformist virtues include: submission to authority, obedience to laws, rules, etc.; acceptance of conventions; deference to will of majorities; following of leadership; and the like. The initiatory virtues are those of justifiable revolt, insistence on rights, independence of the moral judgment of others, demands for freedom of thought, expression, and action, etc. Social conformity and social initiative may both, of course, be intelligent or unintelligent, socially helpful or socially unhelpful; and either may also be motivated in appreciations, ideals, and aspirations.

The word "authoritarian" should be used as generally describing controls of body, will, ideals, aspirations, and the like without much intelligence or reason on the part of the subject. Medieval forms of control in political, religious, family, and even vocational groups are commonly assumed to have been of the authoritarian order. Democracy, the scientific spirit, freedom of thought and speech, "modernism," imply emphasis on independence of judgment, freedom from traditionalism, unconventionality, etc., and therefore departures from an authoritarian order.

GENERAL VS. SPECIFIC SOCIAL VIRTUES

Education suffers much from its free use of unanalyzed general terms, since these lead easily to the fallacies that a whole is like any one of its parts, that general virtues naturally arise from the teaching of one specific kind.

Certain words, like loyalty, toleration, humaneness, justness, sympathy, kindliness, honesty, truthfulness, diligence, coöperation, industry, and many others, are relatively *inclusive* and *general*. Unless used with qualifying terms, they may frequently involve contradictory elements or connotations.

Educators are, for example, urged to "teach loyalty." But social psychologists readily recognize in actual life scores of varieties of loyalties, ranging from those that are so near to instinctive tendencies that they spring up like weeds in the uncultivated areas of gang life, random companionship, and oppressed "small groups," to others so catholic and fine that only a few chosen spirits are ever capable of realizing them.

The implications of the unqualified words "teach loyalty" are often obvious, of course, to the critical reader or hearer. But they do untold mischief among the uncritical, since they give specious support to faith in educational panaceas or "simples." "Boy Scouting," for example, evokes and develops in admirable fashion certain characteristic species of loyalty to fellows, town, country, king, and God. It is naturally comforting to believe that these automatically give rise to others especially useful in adult life, such as loyalty to employers, to minority causes, and to esthetic ideals. In the absence of evidence, it is easy and natural to claim that well developed loyalty to one thing of good repute means loyalties to all other things of "good repute." But in practical life we are seldom seriously tempted to disloyalties, except when conflict of loyalties, all to things of good repute, comes. As long as loyalty to wife, mother, partner, and king involves no conflicts, the course is smooth. But practically they do come into conflict, they clash, and that which has been most prepared for (by instinct in part, and by training in part) wins.

Sociology finds life full of practical situations wherein one kind of toleration defeats another; one kind of coöperation a second; and justice to one set of factors means injustice to another. A man may be diligent in doing the devil's work no less than in doing God's; just as his kindliness in one set of relationships may unavoidably entail cruelty in another.

For practical purposes in civic education, therefore, it is desirable that the practice be adopted of designating civic virtues by terms significant of the actual relationship affected, after which it may become practicable to evaluate the different species comparatively and to determine mutually opposed or concurrent elements. The phrases "loyalty to God," "loyalty to country," "loyalty to father and mother," "loyalty to chum," and "loyalty to ideals of personal honor" are all descriptive enough for

practical purposes. Probably all terms that have come to possess varied connotations should be similarly scrutinized and given differentiation modifiers.

The educational situation here discussed is obviously closely paralleled by that revealed a few years ago in connection with widespread criticism of the so-called doctrine of formal discipline. It had long been customary freely to employ a variety of "omnibus" terms to denote aggregates of more or less similar qualities. Thus we spoke of powers or faculties of observation, accuracy, imagination, concentration, judgment, inference, common sense, retentiveness (of memory), and the like. In somewhat similar spirit, it was customary to generalize about enthusiasm, "pep," moral purpose, hopefulness, "gumption," "sand," and numberless others.

Well informed speakers perhaps make few mistakes in using these terms. Discussing concrete situations, they usually limit their terms to these situations automatically. But educators, seeking new orientations of objectives, encounter pitfalls. Perceiving that certain specific exercises tax in particular ways powers of observation, concentration, or reasoning, they deceive themselves and others by allowing the naïve conclusion to spread that the "faculties" of observation, concentration, and reasoning are respectively being "trained."

CASE-GROUP ANALYSIS

For purposes of practical civic diagnosis the citizenry of this country can be broken up into an indefinite number of case-groups, within each of which certain civic assets and shortages will be found to be "prevailing."

Take, for example, "women school teachers, ages twenty-one to thirty." A few of these may be very unintelligent, immoral, or anarchistic. But they are not "prevailingly" so. Most of us would agree that they are "prevailingly" intelligent, well disposed, moral, law-abiding, and in a kind of way altruistic. What are their "civic shortages" as a class? Certainly not in disposition to evade or break laws—they are usually good conformists. How are they as respects the virtues of "leadership"? Are they critical of misgovernment? Are they reformers? In case of war they would manifest their patriotism in scores of ways—that is, they would follow readily and patriotically the forces of law and order and strong nationalism. Obviously, we can only diagnose their civic shortages in terms of expectations reasonably to be entertained as to persons of their sex, age, experience, and natural abilities. What are these? We possess no sci-

entific analysis yet that is adequate. We often let Utopians tell what these persons "should be and do." Possibly that process is a good method of producing ideals.

What of the civic qualities of these case-groups:

a. Negroes, men, unmarried, having migrated from the South to Northern cities, and now from thirty to fifty years of age?

b. Immigrant Russian Jews, men from thirty to fifty?

c. College graduates, men, from thirty-five to sixty years of age, in business?

d. Artisan workers in highly organized trade unions?

e. Married women living in comfortable homes in suburbs?

f. Colored women, ages twenty-five to forty, of less than average intelligence, and of inferior economic position, in cities like Baltimore, Pittsburgh, and Philadelphia?

Case-groups could be multiplied. But as respects each it will ultimately be necessary to study, not only their civism in general, but specific qualities in it. What of the "American aspirations" of the Russian Jews? What of the actual knowledge of economic issues possessed by the negro manual workers? What about the "self-sacrificing" characteristics of "college men in business"?

PROBLEMS FOR TEACHERS

On the assumption that departmental teachers of civic education will be provided for pupils upward of twelve years of age, the following are some of the problems that these teachers will encounter:

1. To what extent can departmental teachers promote and utilize school government as a means of civic education? More particularly, (*a*) is it desirable that school government as a means of civic education be always used, or may it not prove more profitable to use it for short periods, during which its difficulties and its values may be appreciated by the learners, without imposing upon the school faculty the burden of keeping school self-government active at all times? Compare these problems with those of citizens temporarily taking charge of the maintenance of order, coöperative marketing, street cleaning, or some other collective function that under ordinary circumstances would be left to special agencies. (*b*) It should be noted that school self-government consists of several aspects: first, compliance with the rules and order of the school on the part of pupils; second, the detection of violations and dealing with offenders; third, the initiation of new approved policies. Normally, pupils in large

schools might well be spared responsibilities for these latter, except at stated intervals when possibilities can be demonstrated. It should be remembered that, except in mystical pedagogy, the school group is a very limited and specialized social group, both from the standpoints of compliance with laws and rules, and also from the standpoint of initiating policies.

2. To what extent can the teacher be expected to promote civic dramatic, exploratory, and participation activities or projects? All of these offer important opportunities for civic education, but some of them clearly still make excessive demands upon time, energy, inventiveness, and powers of control both of teachers and pupils. The solution, obviously, is to have in clearly defined form (as now in "Scouting education") a very wide range of possible opportunities amply described, so that groups of students ready for vital experience can be given charge of the execution of projects fairly well within their reach, and not requiring too much of the teacher's time and energy.

3. To what extent can civic education be effected through the organization of civic service or other projects? Three of the groups of means of civic education (dramatic activities, participation projects, and exploration) lend themselves readily to the project form of organization. The essence of this method requires that there should be available for any individual or prepared group a wide range of projects from which they can choose.

4. The teacher of the social sciences will encounter many problems of "freedom of teaching." He will frequently be brought into conflict with prevailing social attitudes, sometimes on the part of majorities, but more often on the part of minorities. It will not prove easy for such a teacher to steer between the extremes of avoiding all references to controversial questions or of appearing to be a partizan of factional doctrines, beliefs, or attitudes.

5. The social philosophy of the teacher will be subject to some vicissitudes. He may find difficulty in interpreting the significance of the state as a social agency.

a. It will readily be assumed that the state aids and supports the existence of the millions of people who are its servants. On the other hand—

b. The people exist and support the state, which is their instrumentality for achieving certain ends. Using the term "society" as the most inclusive designation of the people in any area and time, then the state may be

interpreted as one of the numerous groups into which society develops and through which society works.

c. The essence of the state lies in government, and the significance of its government is that normally it applies to all of the persons resident within a given area, whether they wish it or not. Government in modern life everywhere tends to multiply functions, and is often accompanied by the decay of custom. Government rests increasingly upon law.

The anarchist is against all laws. He thinks a society of ideal men and women would need no laws. But the anarchist is too prone to associate laws with penalties and unpleasant coercions. A constantly increasing proportion of modern laws consist simply of specific directions for orderly and safe procedure. They represent what in very simple societies could safely be left to custom. Statutes prescribing methods of land transfer, licensing for marriage or particular forms of business, regulating traffic and the sale of dangerous articles, and the like, are simply detailed directions which all reasonable persons are willing to accept. In many such statutes, penalties for non-compliance are simply in the nature of after-thoughts.

6. **The large opportunities for civic education** probably lie in the area of adolescence—let us say, the six school years from twelve to eighteen. Prior to this time our children are in, but not of, the larger social groups, in any vital sense. They are active in the family, but not in the party. They participate in the congregation, but not in the church. They are of the primary neighborhood, but only vaguely in the county, municipality, state, or nation. They appreciate local economic exchanges and services, but they only vaguely apprehend what passes outside their personal contacts. They take large social relationships for granted, often quite incuriously, as they take air, the hills, the rain, and railroads for granted.

But during adolescence our children's worlds expand rapidly. Their tendencies now are strongly centrifugal. Even in games intergroup competitions now make strong appeal. In the history of the race, boys of sixteen have been deemed old enough to take part in military campaigns. Hundreds of boys hardly over fourteen played various rôles in the American Civil War.[3]

Experience and development bring our adolescents rapidly to the stage where they can appreciate and share in adult activities—as is now evi-

[3] An interesting picture can be found in an autobiographical story prepared for use in schools by C. W. Bardeen.

denced in such studies as mathematics, practical arts, pre-vocational science, and in travel. Here are the really great opportunities for civic education in schools.

FOR SUPPLEMENTAL READINGS AND REPORTS

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CHAPTER X

CULTURAL EDUCATION: SOCIOLOGICAL FOUNDATIONS

INTERPRETATIONS OF EXPERIENCE

ALL human beings, after infancy, possess interests, tastes, and insights that have little or no relationship to their physical, vocational, moral, civic, or religious needs or activities. Small children are naturally eager to explore their environments, to hear tales of the past, and to unravel the intricacies of the machines about them. These desires expand, differentiate, and take new directions throughout life. The adults among whom we live are found frequently listening to gossip, reading papers, attending the theater, traveling abroad, and reading books. The large majority of these activities lie quite outside, and unconnected with, their vocations; and only occasionally and incidentally do they affect the health and civic activities of these citizens.

All our associates possess these cultural interests and attainments in one form or another and in greater or less degree. Each one of us is capable of deriving some sociological interpretations through answers to questions like these:

1. Some of your associates regularly read the *Saturday Evening Post.* Others are indifferent to that journal, but regularly read the *Atlantic Monthly, Scribner's,* and other similar magazines. What do these differing tastes suggest to you?

2. Certain high-school pupils go twice a week to the "movies." They are, the parents say, excessively fond of dancing, and of all the music, light, dress, and fellowship that go with it. They read newspapers moderately, magazines very slightly, and heavier books hardly at all. In your estimation, are these youths:

a. Now seriously "short" or "low-brow" in culture?

b. Probably destined to be seriously deficient in cultural interests at forty years of age?

c. Capable of being considerably elevated culturally by anything a typical high school can do?

3. Leaving out recent immigrants, "poor whites" in the South, and illiterate negroes, what are to-day the "prevailing" cultural standards of most American adults, over thirty years of age, as respects: literacy; general reading; picture appreciation; appreciations and knowledge of world geography; same, world

history; same, American history; appreciations of nature; avocational interests; cultural knowledge and appreciations of other human beings?

4. Europeans sometimes assert:

a. That American culture is crude, provincial, and "bourgeois." What are they trying to say?

b. That democracy is fatal to culture. Why and how?

c. That much of our culture is "machine made." What does this mean?

5. Can people, in your estimation, exhibit culture in: speech; manners; travel; habitual reading; their friendships; their choice of houses?

6. What are the kinds and degrees of "ordinary culture" which you possess in common with nearly all other American-born adults who have had at least the benefits of five or six grades of elementary-school education? Separately consider:

a. Your "performing" abilities in silent reading; letter writing; pleasing and effective speech; manners of social intercourse; decencies and "decent reticences" of social intercourse and behavior; and abilities to "get about."

b. Your tastes, appreciations, and persisting interests in reading of (1) newspapers, (2) magazines, and (3) books; in drama and photodrama; in pictures and illustrations; in personal dress; in music of several kinds; in nature; as a naturalist; in crafts, gardening, and other avocations lying outside your regular work; in sports in which you are not a usual active participant.

c. Your marked contrasts in culture to other specified case-group?

7. As respects what phases of culture do you now feel yourself fairly well advanced and growing? In what respects do you make no pretenses beyond the lowest average? If a year of free time and abundant money were given you for self-cultivation, along what lines would you seek further to educate yourself? What would be your first choice of means? Your second?

8. Analyze your own present cultural attainments in the following fields, and their probable maximum development during next ten years, in the light of your present ambitions, time, and abilities (include only those appreciations in which you find substantial pleasure, and which you from time to time try to gratify by returning to the same sources): pre-nineteenth-century poetry; Shakespearean drama as reading; nineteenth-century poetry of England; same, American, except Whitman; Whitman's poetry; "modern" poetry; standard classic fiction—Goldsmith, Fielding, Thackeray, and the like; "high-grade modern" fiction—Henry James, Conrad, and the like; popular modern fiction—specify types; classical music; nature exploration; philosophical thought; "social problems" thought.

What tests of your present culture attainments, and self-developments toward higher standards, do you find in your persistently maintained contacts with: English magazines; highest grade American quarterlies or monthlies; same, weekly journals of opinion; illustrated popular magazines; library readings and others.

9. What are some of the signs by which you would recognize a family of superior culture, assuming the group to consist of father, mother, and four children from ages four to fifteen? Would you expect same interests or attainments in the children as in the adults? Would you expect the children to be progressively rising toward the standards of the adults?

10. What are some of the signs by which you would expect to recognize in a small city—having a population perhaps of some twenty thousand—a "high level" of culture, which it is alleged to possess? Would you expect to find ignorant persons, possibly illiterates, in it? Cheap "movies" and magazines? Poor taste in furniture?

Would you expect to find clubs or select circles, cultivating higher interests? What kinds, probably? Would these center about special interests—some about concert music; some about dramatics; others about modern poetry?

11. Recall three typical household groups of your acquaintance, and with reference to each, answer these questions:

a. What is the general reading of the family group or individual members? Separately consider: newspapers, magazines, borrowed (including library) books, owned books. To what extent did the *supply* of reading seem markedly short of their genuine cultural interests in reading? For what members were available supplies excessive?

b. What cultural interests did the members show in: music (kinds); photo-drama (preferences); nature and science; superior qualities in housing, furniture, dress (from what other motives besides good taste?), refined associations, intellectualized intercourse, speech, travel (motives?)?

c. What were the members consciously doing to promote their own self-development along cultural lines?

d. What were they doing to promote the cultural development of others through some form of coöperative endeavor?

e. Having in mind the native abilities and relatively unescapable environments of these families, what seem to you to be reasonable upper limits of their cultural development in: appreciation of current political and scientific thought; appreciation of good music; development of amateur cultural hobbies; reading of fiction; reading of poetry?

CULTURE AND VOCATION [1]

The activities of men can conveniently be divided into two main categories—the productive and the utilizing. Under the highly organized conditions of modern life, fairly clear demarkations are made between the activities of work or vocation, and all others. A man's vocation com-

[1] See Snedden, *Vocational Education* (Ch. 3, The Relation of General to Vocational Education); also, Snedden, *Problems of Educational Readjustments* (Ch. 3, What is Liberal Education?).

monly *conditions* his cultural life in large measure, but does not constitute it.

Primitive man was largely the consumer of his own products. While even far back there were probably small amounts of specialized service in magic, transmission of lore, and possibly in certain forms of plastic art, it must nevertheless have been largely true that, in the absence of trade, large aggregations of population, and stable residence, every adult must produce the "goods" needed by himself and his immediate dependents. Under these conditions each person's culture was closely interwoven with the activities by which he "produced" material commodities, worship, music, moral controls, health, and the like, for himself and his family group.

Contrast with such a primitive a worker taken from any one of a thousand channels of modern productive work. A coal-miner, for example, works underground from thirty-five to forty-five hours per week, taking down coal. His vocation involves almost no change of routine year in and year out. Many of its processes have become largely automatic. With his vocation are intimately bound up some very intense and narrow essential conditions—the clothes he must wear, the risks he must take, the tools and machines he must work with, the supervision he must respond to, and the associates with whom he must coöperate.

But outside of his working hours, and for nearly all phases of his utilization, he lives in a completely different world. The clothes and foods he consumes derive from all quarters of the globe. Newspaper, phonograph, and moving picture convey to him ideas, esthetic gratifications, and other stimuli, coming from near and afar, and often being the output of minds and talents of superior and highly specialized quality. His wife and children express the effects of vocational contacts radically different from his own. The short hours of his vocation leave him some leisure for the cultivation of a hobby—gardening, a variety of craftsmanship, or the prosecution of some civic work. Most of his political responsibilities are only remotely related to his vocation.

In other words, a coal-miner may possess much or little culture, but nearly all of this will be due to contacts, appreciations, and activities lying outside his vocation. His coal mining has no bearing, directly, on those of his literary, artistic, scientific, political, or geographical interests which serve to enrich life. (His vocation may, of course, *condition* them —that is, it may or may not give him surplus wealth enough to gratify his tastes; it may force him to live in an isolated or philistine environment; and it may deprive him of leisure sufficient for the cultivation of hob-

bies. But it is not the source nor the stimulus of his cultural interests.)

Not all workers find their vocational environment so completely detached from their cultural environment as do coal-miners. A high-school teacher of English subjects, for example, may carry over into her leisure hours many interests and tastes derived directly from the requirements of her vocation. (It is submitted that not many do so, however, in American schools as yet!) The teacher's dress, social manners, appreciations of associates, and incidental contacts with music and art, made in or through her school environment, may also largely serve her non-working hours in fulfilment of her cultural aspirations. Even when such a person travels for a month or a year, she is likely to utilize her opportunities in part to enlarge and enrich herself vocationally.

Editors, ministers, artists, and statesmen often seem able largely to "blend" their vocational and their cultural activities. In the more primitive stages of law, medicine, engineering, and teaching there is much merging of the two kinds of interests; but it seems that in more advanced stages fairly complete separations are consciously promoted, having in view conservation of mental health, if no other reason.

Professional and nearly all other workers in our highly organized urban life tend steadily to draw sharp lines of demarkation between their vocational and their leisure season interests. They completely forget their vocations in non-working hours. The saner ones engage during these hours in vigorous recreative activities—cultural, social, physical.

Not a little contemporary literature of social reform deplores these separations between vocation and "life"—as writers mistakenly call it (as if vocation were not one of the most real and significant factors in life!). These writers, reflecting sometimes aspirations born of their own desires, and of the necessities imposed upon artists of identifying their vocations to a great extent with all their other activities, tend to deplore some vanished "Golden Age" when men's vocations were so large and ramifying that they proved vital well-springs of all needed culture.

It is to be feared that these writers have not studied life, present or past, very objectively. The small farmer, home-maker, small shopkeeper, country doctor, sailor, and small hotel-keeper are workers between whose vocational necessities and cultural opportunities hardly any well defined lines can be drawn. Are they the richer therefor? Often they are culturally far more poverty-stricken than those rapidly increasing modern workers for whom the seven- or eight-hour day, the forty-four-hour week, represents the extent of their contact with vocation.

Men and women who work in our factories, mines, department stores, office buildings, and on our railroads, following highly departmentalized callings, tend increasingly, outside of working hours, to throw off all signs of their particular vocational pursuits. Civic participation, social contact, collective or individual acculturation, become for them something quite apart from vocation, and inevitably so. The social order and education must adjust themselves to these as to the other conditions entailed by civilization.

WHAT IS CULTURE?

The word "culture" has various historical meanings and connotations. It will be used here to cover only those interests and attainments that are not tangibly and primarily vocational, civic, or health-producing. These interests and attainments can best be appreciated through inductive study of individuals, and groups of individuals, of whom we all have some knowledge. Nearly all our adult associates have reading interests. Many are so fond of certain kinds of music that they are willing to spend time and money to hear the kinds they like. A large majority are more or less regular patrons of the photodrama. A few, at least, have genuine interests in some aspects of nature—woods, birds, crystals, botany, geology. A small minority have so self-educated themselves that they are recognized as something of connoisseurs in modern poetry, historic painting, period furniture, or old coins.

Of every adult individual whom we know it is possible to show a kind of balance sheet of cultural assets and deficits. Outside of his daily work and his golf taken for physical recreation, the dentist, J. F., for example, does these things in substantial measure: he makes long excursions into the woods; he reads a daily newspaper; he takes much pleasure in well acted comedies; he considers himself a bit of a connoisseur in "European" restaurants, and occasionally takes small parties to dinners in them; and he enjoys playing chess at his club.

On the other hand, J. F. has little or no interest in good music; he has never traveled, and does not greatly care to do so; he is not interested in painting; and he rarely reads a serious magazine or patronizes either the photodrama or the "heavier" spoken drama.

Every small or large social group is made up of individuals who, like J. F., are possessed of more or less culture. In a family group the mother may have superior musical and literary interests, the father none. In a village there may be only one person who cares for Browning or

Brahms, or who likes to read about the work of Rodin. A city of a hundred thousand may be unable to provide a score of supporters of high-grade choral music. It has often been remarked that a few hundred thousand well educated Englishmen, scattered throughout the British Empire, create an effective demand for high-grade weekly, monthly, and quarterly magazines of opinion to the number of twoscore or more; whereas the people of the United States seem to give only niggardly support to a couple of quarterlies, one or two monthlies, and a couple of weeklies devoted to the nurture of superior intellectual interests.

The culture of a social group is a different thing, obviously, from that of an individual, especially where a heterogeneous group is considered. Where superior culture is closely associated with superior native intellectual abilities or esthetic appreciations, obviously not all the individuals of a group can rise to levels of that culture. Certainly the young are not expected to do so until maturity.

Probably the surest test of dynamic culture is its power of transmission as part of the social inheritance of a given group. Let us assume that in a given American city there are now one hundred persons possessed of genuine cultural interests in Shakespearean drama. Fifty years from now will there still be a hundred or more admirers of Shakespeare, or will this interest have "tapered out"? Some English manufacturing cities seem to have possessed, in the period from 1830 to 1860, relatively large numbers of working men and others who took keen intellectual interests in the study of nature—especially geology, astronomy, and botany. A considerable brood of amateur naturalists was produced. Local natural history museums were founded. These cultural interests, according to some accounts, have now largely atrophied, and no other interests of comparable worth have taken their place.

It may prove serviceable to sociological analysis to distinguish kinds of culture according as they are primarily intellectual, esthetic, social, physical, and avocational. Those kinds of interests and attainment that manifest themselves in serious reading of natural science, history, classic or modern foreign languages and literatures, philosophy and current opinion, we can conveniently classify as intellectual. The cultural interests that center largely in music, drama, plastic and graphic art, esthetic dancing, and the culinary arts, we can call esthetic. Other cultural interests —here called the physical—center in the cultivation of bodily grace, strength, and specific powers rather as satisfactions in themselves than as means to physical health or vocational powers. These "sporting" interests we shall include under physical culture. Social culture includes

manners, and all those interests in others that give satisfaction in themselves—obviously, an overlapping classification with "fellowship" as a social end. Avocational cultural interests are of many kinds—gardening, photography, various kinds of craftsmanship, painting, embroidery, forestry, live-stock breeding, wireless operating, and the like.

Further analysis of our associates will show that some have superior esthetic, and inferior intellectual, cultural interests. Some of our "naturalist" friends have meager reading or art interests. Young men and women often go far in self-education toward "physical culture," whilst neglecting, as the rest of us think, their minds and their spiritual needs. Naturally, each one of us tends to criticize in others deficiencies of those qualities which we most affect. The "low-brow" is often as contemptuous of the "high-brow" as the latter is of him. Men with well developed cultural interests in special fields of history find it hard to tolerate the respectful indifference of friends to their hobby. Probably in a democracy each form of culture, from prize fighting to Henry James, from jazz to symphony concerts, tends to develop its special brand of snobs.

Culture of certain kinds is now widely diffused among Americans. All but a small minority of urban dwellers now read afternoon papers. The large majority attend moving-picture exhibitions. Probably a majority of all families have phonographs in their homes. All exchange opinion more or less freely on current topics. They are dimly aware, at least, of current happenings in politics, exploration, and scientific discovery. We spend more money on music than any other people.

The prevailing standards of this culture in the general field of reading can be ascertained with rough accuracy by noting: the contents of widely circulated newspapers, including especially Sunday editions; the contents and make-up of popular magazines, including those offered in quantities at railway and other news-stands; the circulation of public libraries; and the arrays of books offered in book stores, not neglecting those found in department stores.

The variety and extent of prevailing popular interests in music can also be studied more or less objectively by obtaining data as to patronage of theaters and other agencies offering musical entertainment for sale, and by noting kinds of phonograph records sold. Outside of these, it would be proper to recognize the existence in many communities of select groups reproducing and supporting higher forms of music—the kinds that they hope to see popularized at some time hereafter.

We are also a picture-loving people. Good newspaper and magazine illustration has gone far with us. Mechanical processes in photographic

reproduction for printing have, like mechanical processes in music, enabled the multitude readily to gratify their tastes up to a certain point of excellence. The evolution of the moving picture has been so rapid that an adequate appraisal of its "cultural" effects, either intellectually or esthetically, can probably not yet be made. But certainly it represents a sufficiently "democratized" art to satisfy the most socialized!

Applications of the harmonies of form and color are numberless among us, even though we seem to exhibit waning interest in painting and sculpture as relatively "pure" forms of art. All our buildings exhibit, crudely or finely, desires for plastic decoration and harmonious form. Tools, books, cars and automobiles, furniture, tableware, dress, rugs, display windows—all of these express, in America, endless attempts, often conventional and not very sincere, it is true, to import beauty into the necessary surroundings and adjuncts of life. The scope of these efforts can readily be observed, though their actual cultural effects as yet elude the social psychologist and educator. But we must not permit ourselves to be wholly guided by the complaints of the art critic here. His standards may be for the few, not for the many.

DEMOCRATIZATION OF CULTURE

The existence among any people of an aristocracy of birth, wealth, or power seems always to have led to highly specialized cultural demands, which in turn evoked numbers of trained producers of those who could supply them. These true "leisure classes," specializing frequently in esthetic, and sometimes in intellectual, satisfactions, create far-reaching demands for art in all its manifestations. Powerful dynasties and churches have also been generous patrons of the arts that minister to the higher cultural interests—in some cases because monarchs and bishops really cared for the monuments and decorations they favored, and in others, doubtless, because they found along these lines convenient means of aristocratic display.

Certainly there have been long periods during which it was assumed that "culture" was chiefly for the privileged only. That which was "common"—even though it be folk-tale or song or dance, or a widely used form of dress, furniture, or tableware—was by virtue of its commonness denied recognition as a "culture" factor by cultured oligarchies. Probably we have only partly recovered from that cultural snobbishness yet, even in democratic America.

The democratization of culture is, however, now a social ideal in this

and other countries. We wish to use the school as a means of assuring minimum standards for all. The improving economic positions of our people contribute to enhanced demands for the things that contribute to the satisfactions of leisure hours. The commercialization of cultural opportunities—through press, factory, pleasure resort, photodrama, and the rest—has also greatly contributed to the democratization of culture.

But critics and connoisseurs are, obviously, intensely dissatisfied with some of the effects of these processes. "The good is ever enemy of the best." How shall we advance our standards of taste, if there be no leisure class, no select circles, that take pride in their superior interests and attainments? If the many are satisfied with, and lend the support of their amassed patronage to, low-brow fiction, "jazz" music, and tasteless "movies," whence may we expect creativeness, elevated tastes, rising standards of appreciations?

Cultural education thus becomes an object of social demand. Only through schools, or at least chiefly through ideals and appreciations which they can and should initiate, is the next generation to be prepared to demand better things for its culture than does the present. Our present achievements here are not to be despised. Already, as elsewhere indicated, we have made ourselves substantially a literate people, possessed besides of a considerable range of cultural appreciations of geography, history, current events, and general science. Only by contrasting ourselves with some truly unschooled peoples—to be found in certain parts of South America, China, or India—can we realize what advances we have already made.

But large opportunities lie ahead. Probably the American high school has hardly more than begun to realize its opportunities for cultural education. Considering the select quality and large potentialities of our college students, it may well be doubted whether present college offerings yet "function" to a profitable extent in cultural outcomes. Much can and will yet be done through publicly supported extension education for adults and communities.

Cultural education in and through schools must, like physical, vocational, and civic education, derive its objectives ultimately from sociological analysis of shortages or defects now known to exist. What are these shortages at present—in Gopher Prairie, Chicago, or Cape Town? What are they in the United States among the illiterate, the college educated, business men, the "smart set," farmers' wives, elementary-school teachers, trade unionists, the "movie fans"? What are they, for specified classes, as respects the several forms of intellectual culture? Es-

thetic? Physical? Avocational? The determination of these shortages opens up a series of problems with which educational sociology must increasingly concern itself.

Shortages or defects of culture are easily to be discovered in any social group when we apply conventional tests or the subjective standards which we as critics have evolved. But it is much harder to define the harmfulness of these shortages than it is to define the harmfulness of health, vocational, or civic shortages. In what ways are social groups,—from nations to families,—or individuals therein, either harmed or deprived of possible satisfactions by specific cultural shortages? We always tend to answer such questions out of our personal experience, with all its prepossessions and idiosyncrasies. American education has probably relied too greatly in the past on standards set by persons of special cultural attainments. It is not without some justification that the democratic philistine becomes contemptuous of "high-brow" and "Boston" culture.

PROBLEMS OF CULTURAL EDUCATION

Many problems of cultural education thus still puzzle statesmen and educators, because we have as yet but meager and fragmentary understanding of the social significance and values of various specific forms of culture. Several forms of culture center in the esthetic sensibilities; but we possess little light as to the genuine values of well developed appreciations of and powers of amateur execution in, particular fields of music, graphic arts, esthetic dancing, poetry, fiction, and other channels. We do not know what proportions of men and women are really capable of reaching any specified level of intellectual culture. We judge the values of most forms of esthetic culture largely in terms of our own standards—not with reference to their significance to persons endowed differently from ourselves. Every person is distinctly limited as to the time and energy he can give to cultural pursuits. Therefore he prizes those which he most affects, and tends to be contemptuous of those unlike his own to which others are devoted.

A number of these problems will be analyzed later in chapters devoted to the objectives of literature, science, history, the fine arts, and the practical arts in school education. Reference need here be made only to one or two of a general nature.

Distinctions between common and special cultural interests are of great importance in shaping educational policies. "Common schools" are designed in large part to insure certain basic forms of culture (or neces-

sary tools giving access to it) to all. In and through American schools we endeavor to assure to all general literacy, "self-service" or utilizers' arithmetic, appreciation of a variety of simple poems, stories, and essays, and a moderate understanding of geography and history. It has long been hoped that here also could be assured certain universal appreciations of nature, music, and plastic art as elements of common culture.

The special cultural interests that are often found confined to a few persons in a given area may be primarily the outgrowth of superior general abilities, superior cultural surroundings, or of obscure interests that may or may not have been stimulated by education. Every neighborhood has persons who possess these special interests—amateur naturalists, ornithologists, philosophers, stamp collectors, devotees of particular authors, craftsmen, musicians, and the like. Is it to be expected that many persons, or only a few, can share in these relatively exalted interests, even after much conscientious educational effort shall have been expended upon them?

FOR SUPPLEMENTAL READINGS AND REPORTS

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COOLEY, C. H. *Social Process* (Ch. 7, Some Phases of Culture).

CRAWFORD, W. H. *The American College* (Ch. 3, The Place of the Newer Humanities in the College Curriculum).

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ELIOT, C. W. *Educational Reforms* (Ch. 5, What Is a Liberal Education?).

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MÜLLER-LUYER, F. *The History of Social Development* (Ch. 1, Culture and the Science of Culture; Ch. 2, Concerning the Origins of Culture).

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VEBLEN, T. *Theory of Business Enterprise* (Ch. 9, The Cultural Incidence of the Machine Process).

CHAPTER XI

MISCELLANEOUS GENERAL OBJECTIVES OF EDUCATION ANALYZED

THE inclusive classifications of educational objectives proposed in the foregoing chapters are not wholly acceptable to many educators and social economists.

RECENT PROPOSALS

The Commission on the Reorganization of Secondary Education, as previously noted, proposed seven main groups of all the objectives of education, of which three—physical education, vocational education, and education for citizenship—correspond substantially with categories submitted in previous chapters. Their four others—education for family membership, ethical education, education for leisure, and training in fundamental processes—deserve consideration here.

Education for family membership, as well as ethical education, designate as categories groups of specific objectives of the utmost importance. But are they not both properly subdivisions of social education? The family is simply one of scores of social groups in which man naturally functions. During certain periods of his life it is the most important of all; at other periods it is of less importance to him than some others. The family is, in a sense, basic to the social order; but so also are governmental, economic, and religious groupings.

The virtues and vices, too, of family groupings are, in modified forms or distinct species, the virtues and vices of other social groups. Defects of social relationship, signified by such words as untruthfulness, brutality, disloyalty, unchastity, dishonesty, and many others, are found in many other social groups besides the family.

Then, too, why set up ethical education as something distinct from education for citizenship and family life? Ethical facts, principles, perhaps laws, underlie the cohesions and functionings of all social groups, from the family to the nation. In the comprehensive study of social relationships it may very well prove profitable at certain later stages to focus attention on those particular aspects treated by the subject of "ethics." It is to be

doubted, however, whether much of a field will be left to philosophical ethics when the science of social psychology shall have come into its own.

Training in fundamental processes seems likewise an unsatisfactory separate category at present. Obviously, that which the school does in teaching pupils to read and write the vernacular belongs here. But does any other specific objective? Fundamental arithmetic plays a small part indeed, as shown by analysis, in most vocations and civic activities. It has little or no bearing on physical education. Specialized vocational mathematics, in numberless varieties, has its place, as will be shown. But "consumers' arithmetic" is clearly a division of cultural education.

Are there "fundamental processes" in science, modern languages, history, geography, or art that can be analyzed and evaluated by being included in categories separate from the major groupings heretofore employed? Even the reading and the writing of English function so largely in the cultural education of the rank and file, and so little in other fields, that nothing seems sacrificed in including their elemental and unspecialized forms under that head.

EDUCATION FOR LEISURE[1]

The Commission is on more substantial ground when it proposes as a general or major objective "education for leisure." We naturally set "leisure" in opposition to "working time" and "vocational pursuits." In current discussion it should probably also be set apart from "rest" and "sleeping time."

The trouble with this category is its inclusiveness and indeterminateness. Leisure time is, and under varying conditions should be, variously employed. Under some circumstances it should include large amounts of physical recreation, perhaps physical training. Under other conditions it is, and should be, given to any one of numberless forms of cultural or social recreation, diversion, or self-education.

Current loose discussion of the purposes of "education for leisure" rarely deals in concrete facts and proposals. We know, in vague ways, that in modern civilized societies men, women, and children have substantial amounts of leisure. We know that some make very bad use of this leisure, and that most could make much better use of it than they now do. And we believe that it is practicable, through training, instruction, and other forms of education in youth, to realize some of the right forms of "leisure

[1] See Bobbitt, F., *The Curriculum* (Part II, Education for the Leisure Occupations).

behavior" desired in adult life. But beyond these generalizations and rather nebulous aspirations we have little to build on in fashioning programs of "education for leisure."

The proper sociological approaches to the problem certainly involve the following stages:

1. What are the varying social conditions to be considered in connection with the use of leisure? Separate consideration should be given to a variety of case-groups. For present purposes we may take these:

CASE-GROUP A. Artisan working men of native American stock and rearing, with equivalents of full elementary-school education, employed in factories and shops, ages thirty-five to fifty, having normal families, separate house homes, in typical Northern states urban environment.

CASE-GROUP B. Same, but ages twenty to twenty-five, unmarried, and usually living in boarding houses.

CASE-GROUP C. Women, ages twenty to twenty-five, teaching school, living away from home environment, and having had normal school or college education.

CASE-GROUP D. Wives of prosperous owning farmers, ages thirty to fifty, normal families, North Mississippi Valley states, living more than four miles from village center, slightly above the average in prosperity, representing at least sixth-grade schooling, derived from native stock.

CASE-GROUP E. Young men, ages seventeen to twenty-five, unmarried, farmers' sons, and still employed as wage-earners on parental or other farms, having at least elementary-school education, usually receiving good wages, and living not less than three miles from village centers.

CASE-GROUP F. Men, immigrant Italian, married, but wives are in Italy. Unskilled laborers on good wages in American cities under prohibition conditions.

(Readers may diagnose other typical case-groups.)

2. What are the seasons and quantities of leisure now available for these respective groups? We can conveniently assume that Groups A, B, and F work forty-eight hours a week throughout the year, with Sundays entirely free; that Group C work about forty hours a week for forty-two weeks, with Saturday and Sunday free and also six or eight summer weeks; that Group D work seventy hours a week for fifty or more weeks, but with possibilities of "bunching" four or five hours of leisure on Sundays and one other day weekly; and that Group E work about sixty hours weekly, with most of Sundays and evenings free.

Investigation would show us the usual amounts of non-working time now normally claimed for sleep, meals, worship, and fixed social duties

among certain proportions of these various case-groups. By processes of subtraction it would be practicable to ascertain prevailing quantities of time and seasons now properly available as "leisure" for recreation, civic duties, sociability, and self-culture. Finally, we could ascertain uses *now* made of this time.

3. The various practicable uses of leisure should next be considered concretely. Some kinds of workers probably have fairly imperative needs of physical recreation to offset the specialized strains of their daily work. (Is this a probable need of any of the groups above, besides Group C?) Unmarried young workers have likewise fairly imperative needs of the social fellowship that permits and leads to courtship. A large proportion of manual workers have imperative needs of *physical rest* which may be accompanied by intellectual and social recreative activities of a moderately exacting kind. Many of the older men have fairly imperative interests in reading daily newspapers, which reading may, however, be the intellectual recreation accompanying physical rest. (In the case of business men it often becomes an accompanying activity to travel from and to work.)

What are distinctly "superior" types of leisure activities now pursued by a few from each of these case-groups? This analysis will be our best "first" clue to what we have a right to expect from the next generation most nearly corresponding to these here studied, and the children to become which are, except in a few cases, now in our schools.

A few individuals in each group have high-grade "self-culture" interests in reading, music, or exploration. A few have exceptionally good social interests in selecting companionship, volunteer social service, leadership in group recreations. A few utilize their leisure in laying the foundations of vocational advancement.

These specialized tastes and powers reflect in some cases special hereditary endowment, and hence clearly lie outside the range of reasonable expectations for large proportions of any group. But others represent fairly general possibilities, given sustaining ideals and early habituations. Even present educational experience indicates some possibilities.

Given a school in which boys from twelve to eighteen years can form bands or orchestras under competent direction, from 10 to 30 per cent. may be so educated as to develop life interests in coöperative rendition of music. Variable proportions of boys and girls form literary or reading tastes and interests in schools which last through life. In English schools permanent naturalistic interests are found among small numbers.

The foregoing analysis confirms findings elsewhere in this book to the effect that all objectives of education which can properly be classified under the head "education for leisure" can more effectively be studied and evaluated in the relatively "natural" categories, as given in Chapters XXIX-XXXII.

MENTAL DISCIPLINE[2]

Laymen no less than educators like to conceive the larger purposes of education in terms of such abstract wholes as the "trained body," the "rounded" or "well formed" character, the "trained mind," and the "good citizen." For purposes of current discussion these terms have their uses; but they become obstacles to progress when assumptions are allowed to become traditional that some simple educational procedures will produce such manifold composites.

The practical problems of producing in education those results, valuable to individuals and to society, which common sense everywhere recognizes and crudely assembles under the general term the "trained mind," are all very real. For it is obvious that, yielding ourselves for the moment to the opiatelike effects of unanalyzed general terms, we can not dispute the validity of those things that might be called the "trained mind," the "trained or disciplined body," the "trained (or severely formed) moral character," and the like. We similarly generalize when we speak of a "trained dog" or a "trained plant."

The "trained mind," like the trained hand or the formed moral character, is something that men have always recognized in their social environment. But, notwithstanding the vague and often equivocal denoting words employed, it is practically certain that experience with "trained minds" is always particular in its nature. Heredity, of course, gives variable basic qualities, perhaps very general in nature, just as it gives bigness and native strength of body, or wholesome balance of instincts and temperament toward moral character. But the things we perceive and admire in those around us are certain specific powers of observation, of the Indian tracker or Eskimo seal-hunter no less than those of the proof-reader, bacteriologist, or detective. Some of our associates tantalize us by their excellent memories for faces and names, others by their powers of quoting poetry "from memory." The historian is skilled in making one kind of deduction, the practical politician another, the farmer a third.

[2] Consult A. L. Thorndike, *Educational Psychology* (Vol. II, Ch. 12, The Influence of Improvement in One Mental Function for the Efficiency of Other Functions).

Some superficial readers (or auditors) seem now to reach the conclusion that "there is no such thing as mental discipline." But that is no less absurd than would be the conclusion that there is no such thing as "curing disease," or "training the body," or forming moral character.

Recent psychology has, indeed, thrown much doubt upon what might be called the "panacea" theory of mental discipline. When men claimed that the study of Latin "trained the power of observation," no matter to what concrete situations it might conveniently apply, the generalization did assume a uniform underlying power or "faculty." Hence activities that trained one species of the faculty necessarily strengthened, if they did not actually train, all others. We can think of primitive physicians who, recognizing in a variety of diseases the excessive heat characteristic of fevers, would find some quinine-like remedy that would mitigate one of these fevers. A natural inference would be that quinine was a "panacea" for all fevers. Now modern education, like modern medicine, tends toward disbelief in panaceas—whether they be Latin for "powers of observation," plane geometry for "powers of reasoning," woodworking for "powers of exactness," poetry for "powers of imagination," or English grammar for logical thinking. True, there still persist many old fallacies. Even college professors in scientific fields still urge that secondary-school and junior-college courses in physics or chemistry or biology shall be designed largely to teach "scientific method." It is submitted that there may be as many unlike kinds of "scientific method" for education as there are fevers for medicine—and there are no panaceas or other "simples" even for the production of the "scientific spirit"!

It is, of course, practicable, by the use of proper direction and practice, to "train" human beings at all times in life, but especially in youth, in almost numberless directions to degrees of proficiency far beyond the limits ordinarily reached by what can well be called the "natural growth" processes. But, speaking in terms of analytically studied general experience, these forms of possible training are always relatively specific.

We may, for example, speak of a "well developed" hand. Within limits set by heredity, every child, under the nourishing effects of sufficient good food, adequate rest, ample play, reasonable social stimulation, and normal freedom from contagion, attains in mature years to "well developed" hands.

But "trained" hands are something different. In daily life about us we observe numerous specific effects of such training. Most of us can

perform, after long and sometimes painful learning, those difficult operations of fingers and arm which we call handwriting. Some of us can do wonderful things with our fingers on piano keys. A few can give one or more varieties of "curve spin" to a baseball. Self-reliant children, under proper tutelage, early learn the intricate coördinations involved in buttoning. The effective use of that ancient tool, the needle, requires exacting special forms of manual training. Men who make skilful use of hammers, shears, screwdrivers, rifles, knives, typewriters, razors, banknotes, paintbrushes, and the like, must acquire, through painstaking effort, the needed manual facilities.

All of these varieties of training are, of course, "mental" at bottom, in spite of our free use of the convenient term "manual." No thoughtful person is now misled into thinking that those Punch-and-Judy puppets, the fingers, actuate themselves. The strings are pulled from behind, and chief credit for the "trained" performance must obviously be given to whoever or whatever it is that pulls the strings.

Indeed, it may be that, in the case of various kinds of trained hands, we have to do with many performers, if the fancy may be pressed for illustrative purposes. We can imagine a man who is at once a skilled penman, a competent pianist, and an excellent billiardist. The same finger bones, tendons, and muscles are used in each type of activity, and our incomplete knowledge of what goes on to the rear of the scenes leads us to think of a single directing "mind" behind all these skills. But practical experience informs us that when we have trained a youth to be a skilled penman we have not thereby trained him to be a pianist. As far as we know, the trained pianist, wishing to master billiards, must start on the same lowly plane as the rest of us. Perhaps the analogy of the phonograph may be as helpful as anything here. The "trained" horn, diaphragm, needle, and motor give us, now "Rock of Ages" and next "Tipperary"—according to the record inserted into the mechanism. But, after all, it is to the specific record that the distinctive effects are finally due, though an uninformed observer might ascribe them to the diaphragm or to the motor.

Now, "observation," "reasoning," and even "imagination" are, in the last analysis of their numberless varieties, probably no more mental than are the varieties of manipulative activities referred to above. Their channels of manifestation are different, of course, as are possibly many of their concomitant activities and their values—at least, to civilized men. But it may well be doubted whether they involve any very different pedagogy.

For illustrative purposes we can take the qualities conveniently assembled under the word "observation."

Nature has provided that man, like the animals, should develop, under the conditions of "natural" growth, a great variety of powers of observation. Nature's original contributions here to various men are probably no more uniform than are her contributions to size and native strength of body, or natural flexibility of hand. But, within the limits set by inheritance, man is capable of supplementing his "natural" powers of observation by specific forms of training. Given definite direction and practice, he becomes what a man, untrained in these respects, thinks of as marvelously observant of animal tracks, of stars, of wild plants, of faces, of typographic errors, or of word endings. Extending the term to cover other senses than sight, he can become "extraordinarily" observant of musical discords, of tea flavors, of changes of temperature, of characteristic disease odors.

Here again it is obvious that the real basic centers of training are not in the sense organs, but in the directing, registering, coördinating and interpreting agencies behind. The naïve metaphysics of popular thought compels the postulation of some kind of single agency or faculty for this purpose. Even men who should interpret practical experience more analytically often become the victims of general terms here, especially when the very vagueness or ambiguity of these terms serve the purposes of obscuration or propaganda, as so often happens in politics, theology, and education.

The perfectly obvious fact is that we can, with adequate control and effort, train human beings to be respectively very observant of stars or of leaves, of clothes or of faces, of flaws in cloth or of flaws in music. We can imagine a man who has gone far beyond the average in being observant of the niceties of typography, the colors of flowers, and the technique of pictures. But he will at times associate with a friend who is no less observant than he toward flowers, but who is uninterested and largely oblivious to distinctions in typography or in pictures.

The exigencies of preserving life under competitive conditions induce men from childhood to let grow, as well as compel them by their own efforts to reinforce, certain specific powers of observation, according to environment and need. Hunter, fisherman, stock raiser, miner, burglar, shoeblack, lawyer, bookkeeper, locomotive engineer, primary-school teacher, aviator, translator, politician, poet, priest—each in his mature life has his special stock of trained powers of observation. No one seriously denies

that education can produce these, within the limits set by nature in each individual. All purposive education, in or out of school, has always been designed, among its other ends, to produce them. But mysticism here, as in religion, medicine, and science, has often made blind the leaders of those not yet able to see.

But the exigencies of school routine or of educational theory, and especially in times of rapid evolution either of demands for more education or of new purposes, force men to claim certain kinds of magic virtue for specific, and often traditional, processes. Theologians, physicians, and statesmen have often found it expedient to resort to analogous devices.

But now education, as was said above, follows medicine in discarding faiths in old panaceas. (We may be in for a period of sentimental beliefs in new nostrums, however. There appear no small amounts of "faith healing" in our schools to-day, especially in those areas of young childhood where sentiment is most readily enlisted.) One of the foremost educators of the closing decades of the last century could say, to generous applause, "It matters far less *what* we teach in high schools than *how* we teach it." Best informed opinion would to-day whole-heartedly insist: "Everything [for good education] depends upon *what* we teach [of value to the adult individual and to society], provided that in teaching it we use *methods* appropriate to the objectives thus determined."

For the time being, therefore, faiths in panaceas of mental discipline are on the wane. "General training" from specific studies as an objective is viewed with deep suspicion. But we need not "pour out the baby with the bath." Mental disciplines, properly defined, remain as among the most important purposes for the schools—especially important because to so large an extent, in the forms demanded in modern life, they represent the things that only schools (as contrasted with such non-school educative agencies as the home, shop, party) can give. Educators should try assiduously to disentangle from our contemporary vocational, civic, and cultural life those objectives of mental discipline of great significance to our civilization which can be made objectives of school education.

We need, therefore, to set up no general category of mental training under which to include various specific objectives. These are properly to be placed under the general categories of "functioning" objectives easily recognizable in those with whom we associate—here the trained typist, there the trained botanist, elsewhere the trained reader of history.

FOR SUPPLEMENTAL READINGS AND REPORTS

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PART II

THE SOCIOLOGICAL FOUNDATIONS OF THE SCHOOL SUBJECTS

CHAPTER XII

THE ENGLISH-LANGUAGE STUDIES

INTERPRETATIONS OF EXPERIENCE

EVERY adult person uses the "mother tongue" extensively. Many fairly well educated Americans also read a great deal in English. Some write frequent letters, and others love to "make speeches." In thinking of the "Americanization" of non-English-speaking immigrants, our first desire is that they shall learn to understand, then to speak, and finally to read, English. The conspicuous evidences of the failure of school education to reach, or to be effective with, English-speaking peoples is seen, first in illiteracy, and second in inability to write intelligibly.

Here, to an extent found in hardly any other subject, the reader has many and varied prepossessions as to the social values of various kinds of proficiency in the apprehension and expression of English language. His eye is shocked by "bad" spelling and handwriting, and his ear by defective pronunciation and sentence structure. He is probably conscious of certain troublesome deficiencies in his own ability to write forcefully or to speak well on his feet. He is certain that, however much "liberty" he will grant immigrants, they have no right to ask that their children shall be exempted from the necessity of learning the "American" language. It is readily understood that "proficiency" in English is a highly composite thing—in fact, far too composite to make one subject of it. We must consider separately objectives in spoken, and in written, English; in spelling, handwriting, and style; in pronunciation, oral syntax, and speech-making.

Above certain low school levels—perhaps the first five or six grades—the question of educational values that baffles us is, "How much is enough?" All must learn to write with a pen—but how legibly, how fast, how beautifully? All must learn to spell from memory—but shall it be one thousand, ten thousand, or one hundred thousand words? All must learn to speak grammatically up to some standard—but are the standards of the Gould Browns and Lindley Murrays to be taken for general use? Granted that all should acquire some powers of oral reading, when can we say, "it is good enough"?

If one man were just like another in needs, powers, and tastes, the above problems would not be very complex; but men vary enormously. Certainly societies are enriched by the presence of able men and women in politics, education, and cultural societies, who can speak entertainingly and effectively from the platform. Is it desirable, or is it practicable, according to current approved standards, that large numbers should be

trained to do so? Five per cent. of all men? Fifty per cent? How important, after all, is "good" pronunciation, or better than we now have? How relatively important in comparison with other educational needs? Begin by studying these questions:

1. When and how did you learn to speak English and to comprehend it when spoken? Assuming that you were reared in an English-speaking home, have you ever experienced "shortages" in your abilities either to understand the English of your close associates—that is, your well known "peers"—or to make them adequately understand yours?

2. Endeavor to analyze your present masteries of spoken English—syntax, pronunciation, oral reading, enunciation, speech-making, full and fluent vocabulary, and others—in order to discover which of these you owe in considerable part to remembered training or instruction in school or college beyond what you were getting from example of associates.

3. Analyze and provisionally rate as excellent, good, fair, poor, bad, your own English language powers under these heads:

A. Oral expression:
   1. Pronunciation
   2. Enunciation
   3. Full vocabulary
   4. Syntax or correct structure
   5. Oral reading and recitation
   6. Oral composition or speechmaking

B. Oral apprehension:
   1. Audition, correct and full hearing
   2. Ready comprehension of meanings in speech or oral reading

C. Written expression:
   1. Handwriting
   2. Spelling
   3. Punctuation, capitalization, and correspondence technique
   4. Written syntax or structure
   5. Vocabulary in writing
   6. Style and other rhetorical qualities in composition

D. Apprehension of written English:
   1. Silent reading, mechanics
   2. Silent reading, ready comprehension

4. With reference to which of the foregoing does it seem to you that most "shortages" exist among the American people?

By what standards do you judge these to be "shortages"?

What are some "prevailing" defects of English in certain classes with which you have had experience—farmers, shop girls (under twenty-one years of age), miners, society women, and the like?

5. Does it seem to you that the social solidarity or civic cohesion of the American people could be substantially improved by:

1. Eradication of such dialect differences as are now noticeable?
2. General improvement of syntax in speech?
3. General improvement in pronunciation?
4. Elimination of slang?
5. Improvement in silent reading?
6. Universal training of all high-school pupils in speech-making?

6. Does it seem important to you that large numbers of Americans should be trained to read aloud effectively?

7. Would it seem advisable in large city schools not to *require* oral reading after the third grade, provided:

a. All pupils in all grades were given systematic drill toward speedy and accurate silent reading;

b. All pupils were first tested, and then the deficient ones drilled, on quick recognition and correct pronunciation of all new words encountered in reading and studies;

c. Special classes in oral reading and recitation under well qualified teachers were made available for pupils whose parents desired it, attendance conditioned on the ability of the members to show definite and steady improvement in powers, with possibilities of new trials each year;

d. Vocational schools for the few vocations requiring special powers of oral reading (the ministery, elementary- and secondary-school teaching, drama, etc.) provided needed specific training?

8. Do these considerations seem valid:

a. That the arts of oral reading are but slightly practised, or needed, or desired among adults to-day;

b. That proficiency in silent reading is universally needed, and, where possessed, is generally practised;

c. That, from the standpoint of social values, proficiency in oral reading should be classified as a cultural accomplishment like proficiency in playing the violin, amateur dramatics, singing, cultural modern language, etc., toward which special training should be given at public expense only when the individual or his guardians desire it, and good returns follow public outlay on such training;

d. That oral reading as it is now taught, or has been taught in the past, is a wasteful and ineffective means of teaching (1) silent reading, (2) English pronunciation, (3) or appreciation of literature?

GENERAL CONSIDERATIONS

The objectives of nearly all the English-language studies should be defined in terms of powers of continued use. The primary purposes controlling in the teaching of handwriting, pronunciation, spelling, letter-writing, silent reading, and speech-making are the formation of persisting and, if practicable, steadily improving powers of using, with as little conscious effort as practicable, the various language arts designated by those terms. Hence, in practically all their phases these studies in schools are of the "projective," rather than "developmental," order.

The study of English language in schools gives rise to a great number of specific objectives. No adequate analysis of these as yet exists. For convenience they may be classified under three heads: (*a*) spoken or oral English; (*b*) written English; (*c*) apprehended (heard or read) English. Each one of these categories has its own variety of special techniques.

Unfortunately, teachers, as well as the books and articles written to guide them, leave unsolved many problems of objective. Schools have historically confined themselves chiefly to the teaching of reading, and the various branches of written English. Obviously, such techniques as handwriting, spelling, and some punctuation can easily be taught in schools.

Recently much attention has been given to the defining of objectives in the field of oral or spoken English. The ancient subject of grammar was long taught for the purpose of training in English structure or syntax, both oral and written. Undoubtedly, the most intelligent students profited from such studies, but it is not in evidence that grammar as taught to the rank and file of learners has contributed in important measure to structural correctness of speech.

Other phases of oral English still possess very imperfectly defined objectives. Not all students give adequately concrete consideration to the fundamental fact that oral English is in many respects learned as vernacular, both before pupils enter school, and also to a large extent parallel with their school attendance. One result of this dualism of agencies is that as yet we possess no adequate standards of attainment to guide us in such fields as pronunciation, enunciation, structure of conversational English, vocabulary, and voice quality. Naturally, then, these objectives are either ignored in a great many schools, or else are given incidental and desultory consideration.

One effect of correlation has been a serious confusing of definite objectives in English. Many teachers have, in recent years, come to feel that

English language offers a peculiarly fertile field for the application of the principle of correlation. In all branches learners must obviously express themselves, orally or in writing, through English. They must comprehend a large part of that which they learn from the printed page or from lectures. It has seemed logical and economical that the processes of training in English should be in some way combined with processes of instructing in science, history, practical arts, and the like.

It is too early yet to say to what extent the processes of correlation can be economically employed in the simultaneous achievement of two or more distinctive objectives. Obviously, we shall have no measure of success here until the various objectives to be realized are clearly defined. Where this is not done, it becomes inevitable that teachers mistake the shadow for the substance in many of the subjects that they undertake to teach.

For example, English pronunciation should undoubtedly constitute an objective in the various grades in different types of schools. English pronunciation is, of course, learned in part through the vernacular as acquired at home. Nevertheless defects, ranging from those of relatively little importance to those of greater moment, remain to be corrected in the speech of all young people. Since, now, nearly every variety of school work involves a large measure of oral expression, it must inevitably occur to teachers that the teaching of pronunciation can be closely correlated with the teaching of other subjects.

Unfortunately, the plan works no better here than in the correlation of grammar or spelling with other subjects. The fact is that the defects of pronunciation are nearly always of a special and individual character, and if they are to be corrected, prolonged and painstaking drill is essential.

Time was when it was thought that correct grammatical structure, pronunciation, spelling, and even handwriting, could be taught in correlation with other subjects. Specific proposals to this end largely ignore the necessities of concentrated drill and focusing of attention, if defects in existing powers are to be corrected, or if new powers are to be taught.

The objectives of English-language study probably should, wherever practicable, be defined and formulated in terms of their most general social functionings. It has long been common to designate as "written composition" certain well known forms of instruction and training. But in actual life men do not write "compositions." Large numbers write friendly letters; a somewhat smaller number have occasion to write business letters; a few write editorials, articles, and formal epistolary communications; and a few professionals write drama and poetry. It is almost always a mistake to set up objectives, even if only to the extent of employ-

ing denominating terms, that are not functional in outside life. Why should educators not drop the term "composition," and substitute courses in: friendly letter-writing; business letters; essays and editorials for publication; written examinations; travel descriptions; short-story writing; and the like?

Even more ill advised is the recent tendency to use the term "oral composition" in one or more artificial ways. In actual life, again, men and women to not indulge in "oral composition." They converse informally with equals, or they converse more formally with individuals in business and society. They make sustained speeches, talks, or addresses, with more or less of preparation, to listening groups. They also read aloud, or recite, to individuals, or to audiences. Each of these situations imposes its peculiar strains, and for each special training is always possible. But such training should have well defined and evaluated objectives; otherwise it becomes simply the empty threshing over of old straw.

Similar considerations apply in the case of grammar. Only a few people employ in their daily duties or diversions technical knowledge and distinctions consciously derived from the study of grammar. But nearly all persons require more or less training toward the elimination of habitual inaccuracies or inelegancies in their ordinary speech and writing. These constitute, or should constitute, definite objectives for school education.

There can be no objection, of course, to the extensive and thorough study of technical English grammar by able-minded persons who have time, means, and inclination to that end. Such study should doubtless be recommended or prescribed to those persons who desire to enter college, or, even apart from that, to prepare themselves for teaching, writing, or other vocations that require high standards of performance in the use of English language.

SPECIAL OBJECTIVES

It is unnecessary to ask, "Why teach reading, spelling, or writing?" Our lower schools, as they have evolved in recent centuries, were founded and extended primarily to teach these language arts. But it is still very necessary to ask such questions as these: "How much spelling is enough?" "What are optimum degrees of excellence in legibility, speed, and beauty of handwriting?" "Are persisting abilities in oral readings of general importance, as contrasted with precise and deeply fixed powers of silent reading?"

In other directions customary valuations are less certain. Hence the

way is still open to the faddist and exploiter of hobbies. Is it important that all or some children be taught what is now called "oral composition"? For whom is grammar an important study? Pronunciation is learned largely by imitation; but if the "exemplars" are bad, should the schools give special training in this subject?

READING

The history of education tells how certain enlightened ones among our forefathers argued that all children should be taught at public expense to read. Undoubtedly they had to meet opposing arguments. Why should children be taught to read? Could not men be just as well off without reading? Would not illiterates be as devout, as obedient to law, as industrious, as kind to their families, as healthy of body?

The proponents, as we know, sought to prove, sometimes on religious, and sometimes on political grounds, that general literacy was a good thing. Protestants, especially of the more dissenting types, desired that each adult should read the Scriptures for himself. Supporters of democratic government wanted voters who could read newspapers and books. Possibly some others felt that literate farmers or carpenters or seamen could be better workers in their own interests than their illiterate compeers.

Without using some of the dogmas and principles now familiar to students of social economy, these pioneers were, nevertheless, thinking largely in terms of the collective or common good. They were concerned to produce for God's kingdom the largest number of God-fearing, Satan-hating men and women. They wanted worthy, self-directing citizens for colony and commonwealth. The aims of the schooling they proposed were essentially social. They justified it by the light of such sociological insight and motive as they then possessed.

As regards vernacular reading, we can only build somewhat higher or more discreetly on the foundations of education values which they laid centuries ago. We do not ask, "Is it important to teach children to read?" We can, of course, set ourselves problems of a more specific nature, solutions to which will depend, sometimes on more exact knowledge of aim, sometimes on more exact knowledge of method, than we now possess. Is it important that children beyond the third grade should be required to continue drill in oral reading? Is it worth while to try to teach Italian women, coming to America at forty or more years of age, to read English? Is it important that fairly strenuous drill in silent reading be required of children, not yet ranking high in that art, between ages ten and fifteen?

Is it important that girls in normal schools should be given much more drill than is now the case in clear and sweet oral reading? Is it important for cultural or other reasons that oral reading and speaking under specially qualified teachers, be provided as a free elective in junior and senior high schools for pupils desiring advanced and prolonged training therein?

Oral reading has always received much attention in elementary schools. Outside of a bare half-dozen professions, however, oral reading seems to play a diminishing rôle, or, among a large part of the population, a negligible rôle in modern communication. Why, then, should our schools continue to teach the technique of oral reading throughout the grades, or even in the first six grades?

The reasons commonly urged are these: (*a*) even if oral reading is not now widely employed in the home or in social gatherings elsewhere, nevertheless it should be so, and by continuous efforts in teaching oral reading in schools we may hope to revive the lost art and general interest in it; (*b*) oral reading is an essential means of teaching silent reading at all stages; (*c*) oral reading is necessary to the teaching of pronunciation, enunciation, and also vocabulary building; (*d*) oral reading is a valuable means of getting the full content of poetry, drama, and some other types of literary products.

All of these contentions need careful examination. As regards the first, it must be remembered that social groups are rarely homogeneous intellectually to an extent that makes the same content, read carefully, appreciated by all. The family group is, of course, one of the least homogeneous in this respect. In the modern cultured home, containing, for example, the father, mother, an eighteen-year-old daughter, a fifteen-year-old son, and twelve-year-old daughter, it will frequently be found that in the evening or other time of leisure each member of the family is busily engaged in the reading of books or magazines that would have very little interest for any of the other members. The father may be reading the evening newspaper, the mother the *Ladies' Home Journal,* the older daughter a recent novel, the boy a book on scouting, and the younger girl *St. Nicholas.* Each reader is brought by his reading into membership with a vast group of those having similar interests. But the interests represented in the home are very diverse. The same situation often prevails in other social groups—farmers in a Grange, women in a club group, and even boys and girls in the intermediate grades in the same school.

It is probable that oral reading is an essential means of teaching silent reading in the first two, possibly three, grades. Beyond this it may not only well be doubted whether it is a good means,—the problem should be

raised as to whether in many cases it is not a distinctly bad means, that is, a means that produces more bad than good results.

The same objections apply to the third contention. In the early grades oral reading may be a profitable means of teaching various other kinds of oral expression. Later on, however, our very reliance upon it as a means may seriously interfere with the development of more pointed and effective processes.

Large amounts of reading doubtless contribute to vocabulary building; but is there any evidence that silent reading is not far more effective for this purpose than oral reading?

The contention that oral reading is essential to bring out the quality of poetic or dramatic composition certainly has validity; but, after all, is not appreciation in these cases gained by the auditor rather than by the reader? It is, apparently, not yet agreed as to how far poetic composition is at best adapted to effective esthetic apprehension through silent reading. At present only a limited number of persons seem to confess to an enjoyment of poetry as thus presented. It may well be that the dynamic vitality of prose as a medium for story and narration at the present time, in contrast to the vitality of poetic composition, is largely due to the difficulties of apprehending poetry through silent reading.

Silent reading constitutes now almost the universal form of apprehension of printed matter among civilized peoples. Educators have probably assumed until recently that training in oral reading automatically develops powers of silent reading. Few teachers would even now admit that persons who are fairly acceptable oral readers, may nevertheless be seriously deficient in powers of effective silent reading. Nevertheless there are good grounds for believing that just this is the case with many pupils. Doubtless a close correlation will be found to exist between good oral reading and good silent reading; but for the great majority it seems now probable that time and energy could far better be invested in training in silent reading than in oral reading. Both standards and methods of training in silent reading are as yet obscure; but rapid progress is being made, and within the next few years we may hope to find standards of achievement defined which will readily suggest effective methods. In the meantime, all teachers can well afford to give relatively abundant time to training in silent reading by all methods now available. It is important to realize that there exist many varieties of silent reading abilities, taking account of all that we mean by accurate, full, and ready apprehension. The differences in English as employed in an elementary and in a more advanced textbook in geography often impose upon the pupil coming to the latter new and

severe handicaps. This is especially true in the transition from elementary-school to high-school texts, and in beginning the use of books of reference. Wise teachers give special training in the silent reading of each new text as it is approached, and before the pupil is seriously expected to make much progress while studying it without special preparation.

WRITTEN ENGLISH

The objectives of legibility of handwriting in our elementary and secondary schools are fairly well defined, but standards of optimum achievement are not. We can readily take for granted that all but very defective children can be taught to write. Subjective standards of legibility, as well as of speed, all educated persons now possess. These are now in process of being objectified, but we still lack adequate criteria for determining the amount of time and effort that should be expended toward realizing these standards on the part of varying case-groups. Here, as in some other directions, it is highly desirable that the normal performances of men of more than average success in various lines of effort should be examined. Furthermore, it is of the utmost importance that vocational requirements should be sharply separated from those for other purposes. Formerly, the possibility that the learner might follow some vocation in which superior standards of handwriting are exacted prevented anything like a reasonable recognition of what should constitute optimum standards in the schools. Insufficient attention has yet been given to the differentiation of standards of speed and those of legibility. It is obvious, of course, that attainments in this direction are considerably in conflict with each other.

When should the several objectives of handwriting be realized to an optimum degree? It is certainly impossible to attain them all in the first two or three grades. Knowledge of desirable form, and a reasonable facility in its attainment, can be had by the end of the third grade. Speed, and skill of performance of certain advanced types, must come later. It is possible that the objectives of handwriting, as finally defined, will be found best capable of realization through a series of three or more "stages" or areas in training, located respectively in the first three grades, in grades 7 and 8, in grades 11 and 12, and in special vocational schools.

Spelling—should it be taught? As a means of written communication, and that only? To whom? Everybody, in greater or less degree? How much? These problems seem to have been obscure ones for us until

recently. Now we realize the absurdity of trying to have all children achieve memorized mastery over the spelling of fifteen or twenty thousand words, two thirds of which they probably will never use in their own written communications. We are working toward approximate standards for persons of modal needs. We may also soon expect some standardization of the needs of persons like stenographers, teachers, and others whose vocations call for spelling in extra quantities, or of exceptional kinds.

When teach spelling? Here are still some unsolved problems. Certainly the correct spelling of words should be taught not later than the time when the learner will normally desire to use these in written communication. Should the special spelling needed by stenographers be taught before the learner enters the vocational school itself? Probably not. Each type of vocational school—of medicine, business administration, chemical engineering, department-store salesmanship—should teach the spelling required in the writing actually employed in the pursuit of the vocation.

What spelling should be left to dictionary, gazetteer, and other reference books? For a certain short period in their schooling, high-school students will be called to read, and perhaps to write about, Thothmes, Psammetichus, Cyaxares, Eurymedon, Mithridates, and Illyricum. In their eighth-grade work they will work with such names as Caribbean, Tierra del Fuego, Chapultepec, and Natchitoches. Should they learn the spelling of these "for all time"? Or should it rather be assumed that on the very rare occasions when in adult life they will find it necessary to write these names they will at once have recourse to some book of reference?

Written composition—should it be taught in schools? What is the significance of the term as applied to the practical performances required in adult life? Why not substitute for it several terms denoting more specifically the kinds of written performances that men and women engage in?

For example, it is reasonable to expect, not only children, but all literate adults to write friendly, colloquial letters. The quality of the formal English in such letters, as well as the literary style, is capable of varying enormously. There is no reason why, from the first grade to college, we should not recur again and again to this as one fundamental objective of written intercourse—the writing of letters of friendship, in style and quality suited to sender and recipient.

Another style of epistolary composition in which constantly increasing numbers now engage is that of business correspondence. Practical principles of business correspondence differ greatly from those of friendly

correspondence. Here, too, it is possible, very early in the grades to teach one large type of written expression, with all its various techniques as well as stylistic qualities.

A third type of letter might well be recognized in upper grades of high schools, and some training given in its composition. This is the formal letter dealing with other than specifically business topics. It possesses at its best a technique of its own.

Beyond this, is there any reason why the upper schools should not offer, at least as electives, various specific forms of written composition—editorials, short stories, narrative accounts, poetical composition, dramatic composition, essays, etc.?

In other words, let us base our objectives in the schools upon the requirements of youthful and adult life at its best, as exhibited in practice all about us. These objectives can be made concrete enough to appeal to the intelligent understanding of pupils to whom the word "composition" in the abstract is a bore.

The place of grammar has long been a matter of dispute among educators, and also among some laymen. Confusion arises from the absence of explicit definitions, as well as from the substitution of assumption for evidence relative to the effects of specific instruction and training.

Few men whose opinions are valuable would dispute the importance of *training* children and youths in all grades toward habits and ideals of correct structure, as well as of other accuracies, in the oral and written use of the vernacular. Few, again, will oppose granting, at least to high-school pupils, the privilege of electing the study of technical grammar.

But is technical grammar, as commonly taught, an effective means toward correct usage? Here the disputed issues are many.

Typewriting as a substitute for handwriting. It is often urged that schools need concern themselves to a lessening degree with handwriting, owing to the rapid spread of typewriting. This view neglects certain essential social considerations. A large part of the handwriting of nearly all individuals is incidental to travel, social correspondence, business activities, and the like. Under these conditions the substitution of typewriting is now impracticable, and apparently will long continue to be so.

A SECOND LANGUAGE

The belief prevails widely, especially among our intellectual leaders, that the possession of a second language reacts in important measure on the

ability to employ English. This belief doubtless has some validity; nevertheless its various implications need careful examination.

Men who make of writing a profession—journalists, statesmen, preachers, and some others—obviously have need of wide ranges of vocabulary, and of exceptionally fine discriminations of the factors that constitute style. Several sources of these powers exist. The study of a foreign language and its literature may be only one. The modern world aspires to concrete and original thinking, and very frequently these are not greatly aided by the study of foreign languages.

The use of the biographies of men of genius in this connection is of doubtful value. Nevertheless we ought not to fail, in discussing these problems, to recognize the fact that many of the most original of Greek writers were probably no more bilingual than have been Whitman, Lincoln, Mark Twain, Kipling, and London. A large proportion of the men who have contributed to American literature were not only educated in the classics, but also somewhat in one or more modern language. These might be regarded as evidence in favor of the contention that foreign-language study is essential to good English writing. Other explanations, however, are possible. The only education available to men of some social position and literary interests in the seventeenth, eighteenth, and nineteenth centuries in the United States was that received by such men as Hamilton, Hawthorne, and Lowell. Writers of ability could have come from hardly any other schools than the classical, since none other existed. Our own history probably proves that too great devotion to foreign languages and literatures very materially impairs the originality and artistic effectiveness of some writers. Such devotion may be justified in a country's youthful era, when imitation and social acculturation are essential. They may, on the other hand, prove very serious handicaps in eras when a people should, in artistic matters, stand on its own feet and express its own ideals.[1]

PROBLEMS OF "PRODUCTION" VS. "UPKEEP" IN ENGLISH-LANGUAGE-POWERS

The function of schools in several forms of oral English are complementary, supplementary, residual, or corrective to those outside agencies which contribute to developmental or imitative education. Pronunciation, every-day vocabulary, interpretations, structure, and the like, thus come to the school more or less ready made, perhaps badly made.

Such special powers as printed word recognition, spelling, handwriting, technique of epistolary communications, and others, may be learned for

[1] The interested reader will find Nietzsche, *Essay on History,* suggestive here.

the first time in schools. These arts employ, of course, a language content already largely learned, but now subject to some new conditions of expression or apprehension.

In all grades, all subjects involve more or less extensive *use* of language, apprehended and expressed, oral and written. In high schools and above, where teaching service is departmentalized, all teachers must have their pupils *use* English language, but, according to current statement, not all *teach* the subject. There arise many problems of distribution of responsibility, and of confused methods, largely because objectives are not well defined.

Language powers of all kinds need use to preserve them—like all other delicate and complex habits and skills. For the conservation of the finest, it would seem that *use with conscious effort to preserve the fineness* is essential. The more common vernacular powers are used so constantly that they form deep-rooted, fully automatic habits. An energetic girl of twelve to fifteen years of age may utter from ten to fifteen thousand words in a day. The less used powers, especially those newly taught by schools, tend easily to "rust from disuse," to atrophy.

Objectives of English-language studies of the projective order obviously require careful differentiation into those of "production"—of new powers, as habits or knowledge or ideals—and "upkeep." In a high school, is it the primary responsibility of the "English" teacher to teach new things in that language—structure, pronunciation, art quality, oral composition, punctuation, handwriting, and the rest; or is it to "exercise" and "upkeep" powers already acquired provisionally, but not yet firmly possessed?

Have teachers of algebra and chemistry any responsibilities for "teaching English"? If so, what, specifically? If a high-school teacher meets her pupils but five hours a week, whilst they are under the direct influence of other teachers for fifteen hours a week, and under the influence of their homes and associates for perhaps sixty other hours, what are her possibilities of "upkeeping" new and difficult language acquisitions? The situation is even worse when stated in terms of year hours. For more than four thousand year hours language apprehension or expression continues—and of these the English teacher may control from 180 to 360 at the outside. Other teachers "control" perhaps 500 to 800. The home, street, club, and other agencies control the rest.

The following suggestions as to differentiations of responsibility are submitted:

1. It is the function of the elementary teacher in "English language"

classes and of departmental teachers of English later: (*a*) to instruct and train learners toward powers not already acquired in writing, reading and speaking English; (*b*) to acquaint them definitely with the specific defects and shortages in powers already partially acquired; (*c*) to develop means of cultivating appreciations and ideals of, and interests in, good English language according to standards normal to the ages and circumstances of learners being considered; and (*d*) to penalize and otherwise render "annoying" deficiencies in language permitted to remain, or to grow from contact with other agencies.

2. It is the function of the elementary teacher in non-English subjects, and of non-English departmental teachers, to train pupils in the special techniques of English expression and apprehension in their subjects—spelling of historical and geographical names, penmanship for bookkeeping, composition of mathematics papers, arrangement of laboratory notes, oral usage in geometrical demonstrations, enunciation in song, speech-making in civics, structure in foreign-language translation, etc. It is also their responsibility to hold learners up to agreed upon standards already acquired in general expression, written or oral, these, presumably, having been defined by English teachers.

3. It is *not* the province of non-English teachers to instruct or train learners in *new* powers of English expression

TENTATIVE FINDINGS

I. Educational and public opinion are agreed as to the importance of English-language studies in nearly all kinds of schools. But much vagueness persists as to many specific objectives—in both their qualitative and their quantitative aspects. It is submitted:

1. That the purposes or aims of spelling and handwriting are sufficiently well defined qualitatively, and that much progress has been made toward establishing optimum quantitative standards (amounts or degrees of excellence) for different age levels, ability levels, and social needs.

2. That the social purposes or values of oral reading beyond the first two or three grades are largely lacking in formulation.

3. That the widespread social need of efficiency in silent reading is now perceived by educators, but that no agreement exists yet as to the efficacy, for various ability levels, of by-education (at successive age levels and for various home environments) in this field; nor is there agreement as to effective methods of specific training, either toward thoroughness of apprehension, or toward speed of apprehension.

4. That the objectives of "written composition" which are actually now functional or needed among various social groups are very largely lacking in definition and evaluation.

5. That the objectives of "correct oral usage" desirable and practicable for various types of schools are still very nebulous, notwithstanding the ease with which moderately well educated men learn to "appreciate" shortages in others.

6. That neither the desirable nor the practicable objectives of English grammar as a logically organized "study" have yet been established.

7. That historic beliefs as to the reinforcing, or otherwise contributory, values of foreign-language study toward spoken or written English are as yet quite without demonstrated validity.

8. That, in a vague way, contemporary educational practice recognizes certain specific social needs for better results in such departments of English language as pronunciation, enunciation, range and flexibility of spoken vocabulary, oral composition (sustained discourse to audience), and some others; but that it has thus far evolved few clear-cut objectives, and almost no satisfactory means toward meeting these needs.

9. That the historic intimate correlation of English literature with English-language studies (eloquently implied by the still customary use of the single word "English" to cover both) has been a source of confusion and weakness to the objectives and methods of both, and will not be tolerated, once the objectives of each are clearly defined.

10. That the final objectives of nearly all forms of English-language instruction and training in schools are necessarily of the alpha or projective order, although early stages of a beta or developmental order in oral reading, letter-writing, and speech-making may often be defined as a means of motivation and pedagogic expediency.

11. That where specific objectives of training can be defined—in punctuation, spelling, pronunciation, and the like,—compact and direct drills are often the most effective means of education; but that these means are apt to be without efficacy where objectives not reducible to specific form—style in written expression, feeling in speech-making or oral reading—are sought.

II. **Among the theories and practices** involving the objectives of English-language studies now discussed by progressive educators it is submitted that these probably have large degrees of validity:

1. That of subordinating, if not dispensing with, oral reading as a generally required subject after the third grade.

2. That of offering as an elective in grades 4 to 12, where resources permit, oral reading toward superior artistic, cultural, or vocational proficiency to persons of especially good ability or promise in this field (thus paralleling provision of special forms of music, drawing, and the like, as "accomplishments"—possibly "education for leisure").

3. That of giving some systematic training to all, and perhaps much to deficients, in silent reading, both in early grades, and subsequently as specific disabilities are revealed—for example, readily to read new textbooks. Eventually optimum "resultant" standards of thoroughness of apprehension, and speed of apprehension, for varying grades of potentiality or need, may be expected to be devised.

4. That of defining functional projective objectives for required general courses in written composition for the first ten grades primarily in direct and concrete reference to those forms of written communication on the expressive side which are the only concern of perhaps 90 per cent. of all adults—namely, letters; and these of two principal species, (*a*) friendly or social, and (*b*) business. These general objectives may be supplemented by special objectives founded on requirements for class work, laboratory write-ups, and examinations, devised with reference to clearly perceived needs.

5. That of offering for election in grades higher than the sixth one or more courses in special or advanced English composition for persons of exceptional ability or ambition, and designed especially for pre-vocational or other preparatory purposes, looking either to cultural or vocational objectives.

6. That of defining concrete objectives of oral language structure (historically known as grammar, language lessons, and the like) in direct reference to shortages and defects shown by the adults of the community; and of discovering means and methods for their correction that shall employ little, or preferably none, of the technical terminology of English grammar.

7. That of offering for election in junior or senior high school one or more courses in English grammar and rhetoric, designed to give able-minded pupils scientific knowledge of the structure and functions of the various factors of the English language.

8. That of offering as an elective somewhere in the higher six grades a half-year's course in word analysis, with especial reference to word origins from Greek, Latin, French, Anglo-Saxon, or Old English, and miscellaneous other languages.

9. That of offering as an elective in the upper six grades one or more courses in *oral composition* (but under more "functional" designation) de-

fined as simultaneous composition and systematic delivery to audience, and planned to include various forms of debating, parliamentary practice, story-telling, and the like, continuance in such courses to be conditioned on substantial present and prospective achievement.

10. That of instituting research for the purpose of discovering to what extent there exists a need, possibly general, more probably special to certain cases, for very definite and sustained training in: pronunciation, enunciation, and vocabulary building.

11. That of employing English literature as a *corpus vile* for purposes of dissection and practice in language work where necessary, but under no misapprehension that appreciations of, or enduring interests in, English literature are thereby being taught.

FOR SUPPLEMENTAL READINGS AND REPORTS

CARPENTER, BAKER, and SCOTT. *The Teaching of English in the Elementary and Secondary School* (Ch. 2, English in Elementary Education; Ch. 3, English in Secondary Education).

CHUBB, P. *The Teaching of English* (Ch. 5-7, Learning to Read; Ch. 8, Composition, Oral and Written, in the Primary Grades; Ch. 11, 12, Language Work in the Grammar Grades; Ch. 17-19, English-Language Studies in High Schools).

CORSON, H. *The Voice and Spiritual Education.*

HINSDALE, B. A. *Teaching the Language Arts.*

KLAPPER, P. *The Teaching of English* (Ch. 1, Introductory Consideration).

THOMAS, C. S. *The Teaching of English* (Ch. 1, Basic Aims and Values of English; Ch. 3, The Relation of Grammar and Composition to Literature; Ch. 6, Coöperation with Other Departments; Ch. 14, Adjusting High-School English Courses to Vocational Pupils).

CHAPTER XIII

THE MODERN FOREIGN LANGUAGES AND LITERATURES

INTERPRETATIONS OF EXPERIENCE

NOT many decades ago America was still essentially a nation of frontiersmen; it was politically isolated; and its commercial and cultural connections with other than English-speaking peoples were not important. The recent great changes in our international position are commonplace to all well read persons.

What should these facts mean in reference to the study of foreign languages in our schools? Do we need them more or do we need them less than in our national youth? Few contemporary educational problems are more obviously in need of solution from the larger sociological viewpoint. The reader's personal prepossessions, as shown in answers to these questions, will serve to bring into relief a number of vital problems:

1. Does it seem important to you, from the standpoint of our friendly commercial, political, and cultural relations with other peoples, that substantial numbers of Americans should be able to read, speak, or write one or more foreign languages? Would you include among these Japanese? Portuguese? Italian? Turkish? Chinese mandarin? Swedish? Dutch? Why, in each case?

2. Are relatively large numbers of Japanese and Chinese able to use English? Does this relieve us of the necessity of having Americans who can use their languages?

3. Entering a certain large city high school are one hundred pupils of whom the following facts seem substantially true: all are of superior ability, as shown by elementary-school records; they come from poor homes; some will probably go to college or normal school, in spite of the very substantial financial hardships which that will entail; all will have to work hard in order to prosper at all well in the world's goods, since they must start life not only without capital, but probably in debt. Many of them will probably prefer to enter business without going to college. Assuming that those entering college need not present a foreign language for admission, how would you advise all of this hundred with regard to taking two or more years of foreign-language study? Would you recommend all to take some one language? If Japanese and Italian were offered, would you be glad to see some take one of these? In any case, *how much* of the language would you recommend? Why?

4. In a certain Colorado high school are one hundred girls of whom the following description is fairly correct: they are of only average ability and interest in school work; nearly all will enter upon wage-earning vocations in stores, laundries, and restaurants at or about sixteen years of age; their home environments are those of railroad and other manual workers; their "small-group" social interests are strong, but their "large-group" interests very weak; and their cultural interests are largely of the moving picture, Sunday newspaper, current fiction order. Most of these girls will be home-makers from the age of twenty-five on.

Several of them want to elect Spanish in the high school (they are assumed not to be in commercial departments). Some want French. The parents of some believe in Latin. What advice would you give to these girls as to modern-language study?

THE SOCIAL NEED

Clearly, the war has given us, in the eyes of the other nations, and in the eyes of all Americans except a few "hill billies," that forefront position to which our wealth, our geographical size and position, and our social homogeneity and solidarity have long entitled us. We have spent three centuries settling and developing our zone of North America, and in this fertile soil, amidst favoring conditions, we have nurtured democracy, general intelligence, and good standards of living. Now our rewards, and our great responsibilities as well, come to us in the shape of pleas and demands that we shall do our part—the largest part, it may well prove to be—in redeeming the rest of the world from its imperfect state, in bringing to other peoples the blessings that have come to be ours partly through our own efforts and partly as a result of favoring conditions.

It becomes henceforth our opportunity and obligation to carry our wares, material and spiritual, to other lands as never before. We have become overnight the world's second creditor nation. We seem likely to become again a great mercantile carrying nation. Our factories will seek export markets in all countries, and from these we may expect in return endless streams of raw materials, special foodstuffs, and locally fabricated goods. We shall increasingly find ourselves solicitous that throughout the world political harmony, equal justice to all, democracy, and diffused intelligence shall be found. Toward no war anywhere in the world can America in the future remain indifferent. We shall not permit any half-civilized people long to exclude religious, political, or scientific missionaries whose propaganda is founded on reasonable good will, and a due regard for the opinions of those among whom they would spread the light.

But if we are to lead, it becomes and behooves us to understand well those whom we are to lead. Commerce is promoted with extreme difficulty between those who must remain largely inarticulate in each other's presence. There can be no adequate mutual understanding and sympathy between Russia and America if neither possesses interpreters of the speech and writing of the other. At the present moment it is certain that Japan understands America very well, because thousands of Japanese can freely speak our language and read our books and journals; but we must sadly confess that the reverse is not true. In the long run, it is probably not well that a strong people, prone to fall into arrogance of spirit and conceit of understanding, should require weaker peoples to make all advances in bridging the gaps in language, custom, and other factors of social inheritance that lie between.

The partizan position, that hereafter the study of modern languages must and will play an increasingly important part in our national education, is very easy to defend. Hence the easy conviction, too, that we shall need greatly to extend the range of languages studied. Surely Japanese, Chinese, Italian, Russian, Portuguese, and Turkish are to figure prominently in our international relationships in coming years. We can not well afford that our consuls, traveling students, missionaries, and convention delegates in alien lands shall always require the uncertain aid of interpreters even in social intercourse. We are slowly becoming aware that if salesmen from America are to be effective in promoting business in foreign lands, they must speak the vernacular with ease, and be able to appreciate those local customs and points of view which can be well apprehended only by persons able to converse in that local vernacular and to read the local documents that give current expression to taste, standards, and ideals.

Let us, then, greatly exalt the study of modern languages in our secondary and higher institutions of learning—that is the easily reached *ex parte* position. Recent years have witnessed almost the last of the many enforced retreats of Latin from its former highly protected positions; henceforth the modern languages can claim equal standing with the classics in that court which, for the present, is the only arbiter of educational standards that can really enforce its decrees—namely, the court of college entrance tests. Let us endeavor to make the study of a foreign language an important part—perhaps second to English only, adequate mastery of which, it is alleged, study of another language should greatly reinforce—of the curricula of all secondary schools. Let us require every aspirant for a degree to prove his proficiency in one or two foreign tongues. Let us so often repeat certain of our choice dogmas that presently they will have

become dogmas of democracy, such, for example, as: "A man who does not know a second language can never really know his own." "Without a knowledge of words there can be no real knowledge." "Without the knowledge of a people's language there can be no adequate knowledge of that people." "Language study affords an unequaled means of mental discipline; and the grammar of language an especially valuable means of training in logical thinking."

Such are the flights of educational fancy permitted in the present state of educational science to the devotees of particular branches of learning. But here, as elsewhere, the sociological student must keep all ends in view.

Many of the historic offerings in schools of higher than primary grade have been provided in response to the demands of individuals, and without scientific consideration of the needs of the state or other social grouping in which these individuals must live and act. But now we inquire after the use of these offerings to the society of which the individual must be a part.

For example, as regards the contemporary foreign languages, it has been the province, first of private, and later of public, effort to cater to individual demands, just as a pharmacist caters to individual demands for healing preparations. Instruction and training in foreign languages were first sold or given to those who desired to buy or take, with little consideration as to the values of these buyings or takings to others than the individual immediately concerned.

Problems of relative values must now, however, be given first consideration. Why should we offer, with or without price, instruction and training in tongues other than our own? What benefits will accrue to society directly, or as a secondary consequence of benefits realized by the individual? For whom is it advisable and profitable that opportunities for such study be provided? For persons of what grades of ability? Of what ages? Of what promise of future occupational or cultural development? What are actually the feasible and desirable vocational objectives of modern-language study? Under what conditions of attainment and application are these realized in degrees justifying needed expenditures of social effort? What are actually the valid cultural objectives of foreign-language study? The civic or social objectives? The "mental disciplinary" objectives—if any one now cares to raise the question of these as primary objectives?

It is evident that the tendency of inquiries like the examples just given is to disturb the faiths and beliefs, perchance the illusions, that have been permitted to grow and take on fixed character in connection with almost

every department of study. If the comparison may be pressed, they suggest that in the future the offerings of education, far from being like the nostrums available to any buyer in the primitive pharmacy, will be rather like the ministrations of modern medicine and sanitation—given only after scientific determination of needs to be served, diagnosis of conditions to be met, and careful estimate of the probabilities that the indicated means will realize the ends intended.

Even a small amount of critical examination of the theory and practice of contemporary modern-language instruction in our schools and colleges will suffice to convince the impartial student that existing standards of aim, of functionings of means and methods, and of estimates of results are very vague and unsatisfactory. It is a reasonable estimate that we have been expending annually in recent years somewhere between seven and ten million dollars on modern-language instruction in the public high schools of America. The standard aims, qualitatively and quantitatively, of such instruction have been determined almost exclusively by college entrance committees. What is the evidence that these committees have systematically tried to determine valid social, or even individual, needs to be met? Have they ever tried, coöperatively, to provide reliable estimates of the results accruing from existing practices? Have they ever tried to guide educational administrators in determining the relative values of modern-language studies, as compared with the values of other studies that must be foregone if these are taken?

Looked at in the light of present knowledge, a formidable indictment should be drawn against all present-day modern-language teaching in America, on account of its almost incredible superficiality. What enduring powers does it produce in the great majority of those taking it? What appreciations known to be worth while? We complacently permit our pupils often to elect, in their naïve simplicity, a second modern language, when the most casual forecast of their probable educational future would show that in ninety-nine cases out of one hundred they will not, perhaps could not, pursue one alone to any point of genuine mastery. We educators talk about the virtues of thoroughness, and then calmly create, or at least tolerate without protest, conditions under which thoroughness is impossible of attainment. Educationally we are still a people content with futile beginnings, a people of pretentious works started but never to be finished, a people hypocritically pretending to culture when we possess only the tawdry imitations of culture.

The superficiality of current modern-language training should not be blamed on pupils or their parents. Fundamentally, and in the long run,

pupils and parents do what educators demand when such demands spring from a spirit of sincerity, and are manifestly based on definite educational knowledge. Collectively, it is we educators, specialists and administrators alike, who are responsible for the large amount of purposelessness and charlatanism characterizing our teaching, and especially in those hard school subjects in which certain difficult goals must be reached if the time and energy invested are to bring any real returns whatever. Modern-language teachers should possess generally approved and insistently voiced standards of aim, of definite objectives under stated conditions. Administrators framing curricula should be aided to evaluate comparatively the studies profitable for pupils of varying probable educational futures. Of what avail is a meager year or two of French to the eight hundred thousand pupils now in American schools, who will certainly leave all school life behind them after completing at most the tenth school grade? Scores of thousands of girls are now taking Spanish in our general, as well as in our commercial, courses; to what per cent. of them will it ever prove in the least profitable, culturally or vocationally?

But, it is said, what else can we do? Our schools are the schools of the people—are we to refuse to do what the people want us to do? If Spanish is offered at all, can we refuse any one the right to take it, or, having taken it a term or a year, to drop it? And if a misguided youngster takes French the first year, but wants to shift to German (pre-war German, of course) the second, who are we to say him nay? And if, in a village high school of one hundred pupils, the school board authorizes the teaching of Spanish, but influential Mrs. Brown insists that her daughter must have French, what shall we do? What can we do?

PROBLEMS

We can only reply that these and many other similar difficulties will always dog the footsteps of a profession that is itself lacking in technical and social standards. We must find out what we are striving for, or what we ought to be striving for, whether what we are striving for is worth the effort, and what are the new things to strive for that would almost surely be worth the effort. The following questions suggest some of the problems which, given resources and service for educational research, ought certainly to be capable of solution within the next decade; and if such work were done, we should presently be on sound ground for a genuine advance in the teaching of modern languages:

1. What are, in such languages as French, Japanese, Spanish, Chinese, Italian, Russian, and Portuguese practicable objectives that can be realized in the course of the general education of persons of A, B, C+, C, C—, D, and E grades of natural linguistic ability between the ages of twelve and twenty as a result of the devotion of from fifteen to twenty per cent. of available working time and energy, these objectives being separately defined in terms of:

a. General reading knowledge of contemporary journals, books of average difficulty, etc.

b. Abilities to understand spoken vernacular, and to speak it intelligibly.

c. Abilities to write the vernacular with sufficient accuracy for practical or known vocational purposes.

d. Abilities to read classics and to appreciate local literature and history in the foreign language.

e. Mastery adequate to give cultivated speech, good reading knowledge, powers of translation and interpretation, etc.

2. What are practicable and desirable objectives in such languages as Spanish, Japanese, and French, for vocational schools, separately considered as to:

a. Schools of salesmanship, boys of good ability and general schooling, ages seventeen to twenty, four-year course.

b. Schools of stenography, girls of good ability, prerequisite two years of general high school, two-year course.

c. Colleges for consuls, students of excellent ability, twenty to twenty-four, prerequisite two years general work.

d. Engineering students, eighteen to twenty-two, preparing for work in America.

3. What are optimum standards of diffusion of culture and of international understanding which should be sought for by American society through the study, in accordance with stated standards of expected achievement, of, respectively: French language and literature (the word *literature* being used very comprehensively); Spanish language and literature; Russian language and literature; German language and literature? What estimates can now be made as to the proportions of men and women, masters of, and permanently interested in, these subjects, to stated degrees of excellence, who would diffuse culture and right social aspirations in optimum degree? We would all agree that it is not practicable or necessary to have 100 per cent. of adults so qualified. What of a ratio of one to one hundred? One to one thousand?

4. Assuming that the country could afford to, and would, invest twenty million dollars of local and state funds annually in the teaching of modern languages, what, by good sociological standards, would constitute the probably best use of such money:

a. What proportions should be given respectively to realization of ends of liberal, and of vocational, education?

b. What proportions should be given respectively to each of the eight most used modern languages?

c. How would selection be made of those on behalf of whom substantial investments should be made, and what conditions or obligations, if any, should accompany the privilege of studying the language?

d. At what age, for any given language, should study begin, and what would be the requirements for subsequent years of that study in programs recommended to students?

e. Under what conditions would students be permitted or encouraged to take a second language?

5. What, under reasonably good conditions of teaching, are the learning capacities of various grades of students in attaining the various objectives of modern-language teaching? For example:

a. Given a student of B grade (good) linguistic ability of age twelve, and thereafter free to give one fifth of his "working" school time to acquiring a reading knowledge of journalistic French—what powers can we reasonably expect at age sixteen?

b. What powers of speaking and reading could we expect if the objectives had been combined?

c. What reading knowledge of Japanese could be expected under these conditions?

d. What speaking knowledge of commercial Spanish?

6. At the age of eighteen a student, who has previously had no foreign language, enters upon the study of a branch of engineering in which he learns that his progress and rewards will be greatly helped by a good reading knowledge of the technical matters of his subject in German: what program of language education should be recommended?

7. A clerk, twenty-five years old, in a commission house in New York, discovers that his opportunities for advancement would be greatly increased if he possessed a ready and accurate reading knowledge of the Spanish used in business correspondence. If he possesses average linguistic ability, what should be provided for him?

NEW AIMS

Certainly the war and its after consequences are bearing gifts of opportunity to modern-language teachers. Hereafter several modern languages must be valued highly among our educational offerings. Latin and Greek now definitely take their dignified places in a democracy of studies, instead of occupying the artificially protected positions inherited by them, to their final disadvantage, from ancient practice.

But let modern-language teachers beware of seeking profit from the perpetuation of old dogmas. Let them not try to erect protecting tariff

walls whereby to upbuild or enhance their infant industries. Especially let them avoid the unwise formation of little educational cults devoted to mutual interchange of thought, while being severely walled off from those other cults that likewise revolve in their own little orbits. Education tends steadily to discover new objectives not less valuable than the old. American education above the primary grades is destined to be endlessly flexible and varied, according to the native capacities and the probable future responsibilities of individuals or groups of individuals exhibiting likeness of requirement. It is incumbent upon each specialist to develop his specialty to the utmost; but only at his peril dare he neglect to seek constantly to relate his specialty to the multitude of others that will be available. Let us hope that in a genuine sense every educator will in the future know all about something—his own specialty—and something about everything—the specialties of all others.

THE PRESENT SITUATION

The term "modern language" is here used to include not merely French, Spanish, and German as these have been customarily taught in our high schools, but also Japanese, a form of Chinese, Portuguese, Russian, and other languages which, for social reasons, might well be included among the offerings of our lower and higher schools.

The present situation as regards the teaching of modern languages in the schools of the United States is, as already noted, most unsatisfactory. College admission standards, as well as popular sentiment, have greatly encouraged the offering of French, German, and Spanish in our high schools, academies, and colleges. Probably more than one third of all the pupils in our high schools give one or more years to a modern language, and an appalling number make beginnings in two or even three of these languages. It is no underestimate that the cost of modern-language teaching in our public schools alone approximates ten million dollars annually.

Yet for this large outlay it would seem that we have very little to show. It is certainly the experience of most educators that ten years after leaving secondary school most of the students who have taken modern languages are unable to exhibit either reading or conversational powers in them. Doubtless all of our secondary education is superficial; but it may be seriously questioned whether superficiality is as wasteful in any other field as it is in the learning of a modern language. Our higher institutions assume that reading knowledge of a modern language is valuable, if not essential, to the prosecution of higher studies. Nevertheless very few of them

apparently make very serious attempts to insure the functioning of such knowledge and skill in the use of such foreign-language mastery as entrants bring from secondary schools.

The objectives of modern-language instruction are, obviously, imperfectly formulated as yet. A wide gap exists between the aspirations expressed in papers before teachers' bodies, and the actual achievements of our schools. Nowhere is the "codfish" method of reproduction more fully paralleled than in this field. Few indeed have been the attempts thus far to trace connections between modern-language instruction in our schools and service in our society at large. The aims now controlling are variously formulated. Probably first among our aspirations is the broad cultural purpose. Foreign-language study is designed to enable the student to comprehend the literature and the spirit of the country whose language he studies. This may be closely related to the more utilitarian aim often urged upon students of science and history—namely, that they must be able to go to the literatures in the language in order to find materials for further study.

The aim next in importance historically has unquestionably been the disciplinary. The source of this conception is not difficult to find. As it became harder to defend Latin in schools and admission requirements as a required subject on grounds of its contribution to general culture, educators developed the practice of defending it as an unrivaled means of intellectual discipline. The various dogmas evolved in this connection are now familiar to most students of education.

The proponents of modern-language study early undertook to prove that training in a modern language can be made as "hard" or disciplinary as the study of Latin or Greek. The modern language trains pupils to observe, to reason logically, to concentrate, and to discriminate finer shades of meaning. But this doctrine of the unique importance of any foreign-language study as a means of mental discipline has now been substantially destroyed.

Frequently, too, it has been urged that the study of modern language is essential to the fuller comprehension of the mother tongue. This doctrine sometimes assumes the broader dogmatic form that no clear thinking or extended language power is practicable except through the possession of at least two tongues. Such articles of faith now need thoroughgoing examination; they are of very doubtful validity.

Finally come considerations of commercial utility. Spanish has been urged for introduction into secondary schools because of the considerable possibilities of commercial intercourse with the Spanish-speaking countries

lying south of us. Several hundred thousand pupils in our American high schools are now taking Spanish, in vague anticipation of being able to employ it later to advantage in commercial ways. It would seem that thus far little consideration has been given to relative probabilities that men or women will enter upon vocations in which the possession of a speaking or reading knowledge of Spanish would be an advantage. Little consideration seems also to have been thus far given to the relative probability that persons from different parts of the country will enter upon such vocations. There must be many reasons why it would be more profitable for the pupils in the high schools of Texas, southern New York, or Louisiana to take Spanish than those of Maine, Ohio, and Minnesota.

TENTATIVE FINDINGS

The social objectives of modern-language study in our schools are capable of more adequate formulation than has yet been attempted. It is suggested that the following considerations, fully studied, might easily lead to the development of a set of guiding principles:

a. It is certainly of importance to the United States, as one of the company of influential nations, and as a nation standing very high indeed in wealth, general intelligence, and international influence, that among its citizens there should always be found some who would be well trained in, and generally enthusiastic about, the languages and literatures, respectively, of the Japanese, French, Chinese, Germans, Spanish, Portuguese, Russians, Italians, Greeks, and some other peoples.

b. It would be relatively a great waste of educational effort to try to have large proportions of our peoples so trained. We have no means, as yet, of ascertaining whether the interests of the nation would be adequately served if one per cent. or only one hundredth of one per cent. of all persons receiving a full secondary education ultimately became proficient, in the sense herein indicated, in any one of the languages named. Somewhere between these extremes, certainly, optimum proportions are to be found. One can imagine a situation in which every urban or rural community in the United States of not more than five thousand people would be likely to possess within its confines at least one proficient and enthusiastic reader and speaker of Japanese or Russian or Italian or German.

c. Schools might well differentiate several types of distinctive objectives in this field, modern-language instructors to the contrary notwithstanding. There is no reason why a school should not set up as a goal in French a reading knowledge only of ordinary scientific or commercial publications.

Such knowledge might be quite independent of any considerable speaking or composing powers in that language. Similarly, it might be possible to train toward the easy conversational uses of Spanish, without necessarily training to the point where the reading of literary Spanish would be a facile operation.

d. Wherever practicable, modern-language study should be encouraged only on the part of those who will probably have ample time and sufficient ability to realize valid objectives. Probably these should, in many cases, be independent of useful cultural achievements and vocational success along other lines. In other words, the cultural mastery of a modern language, as here suggested, would be undoubtedly achieved in the majority of cases as a cultural by-product.

e. Granted the validity of these aims, many reasons exist for providing early in the secondary curriculum for initial training in a modern language. There exist no inherent reasons why, at least in our urban schools, opportunities for modern-language study should not be available as early as the fifth or sixth grade, provided a discriminating selection of students therefor were administratively feasible.

f. Best results could probably be assured, if collective action over a wide area were practicable, if the state would place a premium upon the study of any specified modern language and its literature by offering such opportunities on some competitive basis. Thus, in a school area in which five thousand pupils normally entered the fifth grade, one might be selected each year to be given extended opportunities for the study of Japanese. Such selection should be made, first of all, on the basis of probable linguistic abilities, and as a second condition there should be required the pledge of parents to coöperate in allowing the student thus selected to study the language in school and college for a number of years sufficient to obtain genuine mastery. The conditions of such mastery should naturally be indicated clearly in advance—the probable amount of time and effort required, and the obligations that would be entered upon.

FURTHER PROBLEMS

The following problems are in need of further study:

a. In the case of children of no distinctive foreign ancestry, what are probable indications that modern-language study can be prosecuted by them with most success? Would superior ability in English speech or writing be probably a valuable index? Would high ranking in general

intelligence be a good index? Could a still more effective means be discovered through a brief "trial" period of the study of the foreign language itself? Would special tests of vocal or auditory powers be worth while? Here early experimentation is practicable.

b. To what extent, in any field of organized knowledge of a vocational nature, is the ability to read in a foreign language likely to prove hereafter functional? Under what conditions do discoveries recorded in French, for example, in fields of electrical engineering, science, or medicine, remain for many years "embalmed" as far as America is concerned in French? What is the situation since the great War in regard to chemistry and chemical engineering as relates to a reading knowledge of German? What classes of professional workers in the United States would at the present time be benefited by a reading knowledge of Japanese?

c. What is the extent of the demand for various types of workers who can employ respectively a speaking, a reading, and a writing knowledge of Spanish? More specifically, what will be the probable annual demand in the commercial area served by Boston high schools for young men and young women, respectively, who can read commercial Spanish, understand and speak oral Spanish, or write letters in Spanish?

d. Similar problems should be studied in regard to Chinese, Russian, Portuguese, Danish, Italian, and other languages the study of which might well be urged for reasons of commercial intercourse.

e. What is the relation, if any, between the wide social demand for modern-language study and the geographic area served by certain schools? Should we expect, for example, that as much Spanish in proportion to population should be offered in the schools of Missouri, Iowa, or Minnesota as in those of New York, Maryland, and California?

FOR SUPPLEMENTAL READINGS AND REPORTS

BAGSTER-COLLINS, E. W. *The Teaching of German in Secondary Schools* (Ch. 2, Aim of a Course).

BAHLSEN, L. *The Teaching of Modern Languages.*

BREUL, K. *The Teaching of Modern Foreign Languages.*

HALL, G. S. *Educational Problems* (Ch. 15, Vol. II).

INGLIS, A. *Principles of Secondary Education* (Ch. 13, The Place of the Foreign Languages).

JESPERSEN, P. *How to Teach a Foreign Language.*

JOHNSTON, C. H. *High School Education* (Ch. 14, Modern Languages (W. A. Carruth), contains bibliography).

KRAUSE, C. A. *The Direct Method in Modern Languages* (Ch. 3, The Trend of Modern Language Instruction in the United States).

WILKINS, L. A. *Spanish in the High Schools* (Ch. 2, Why Teach Spanish?; Ch. 5, The Aims in Teaching Spanish).

CHAPTER XIV

THE ANCIENT LANGUAGES AND LITERATURES

INTERPRETATIONS OF EXPERIENCE

ALL contemporary culture is rooted in old cultures. Culturally, Americans are descended from ancient Greeks, Hebrews, Romans, and Arabs, no less than from Anglo-Saxon and Gaelic ancestors. Much of the current religious tradition of Christianity derives from Hebrew sources. Our art and literature root back into Greek origins. The language and politics of English-speaking peoples owe much to the Romans. The Arabs gave us largely of their originated or acquired stores of mathematics and science.

The study of these origins has for some persons a fascination. These can make of the classic studies sources of deep and genuine culture. Historian, philologist, and sociologist find themselves constantly harking back to ancient records for new interpretations of knowledge; and occasionally that knowledge is very practically applicable to study of present-day problems.

There are other ancient languages and literatures, less directly connected with our own, which also provide centers of keen interest for chosen spirits. Antiquarians, at least, are convinced that the sum total of "worth-while" human knowledge has much to gain from researches into Sanskrit, Chinese, Erse, Aztec, and Babylonian sources.

Current controversies as to the educational values of the ancient languages center almost wholly around their prescription in secondary school or college. It has heretofore been assumed that no true "liberal education" was complete without some acquaintance, at least, with Latin and the most noted of the classics in that language. Some of these problems emerge in discussion of questions like the following:

1. What are phases of older Egyptian, Grecian, Roman, and medieval history that make strong cultural appeals to you? What surviving literatures of these periods make vivid appeal to your tastes?

2. Give examples showing how well known American writers—Hawthorne, Lowell, Longfellow, Moody, Poe, and others—drew upon classical sources. In what respects do they seem better or worse for this than Cooper, Mark Twain, Whitman, and others who were less interested in such sources?

3. How do you explain the strong position still held by Latin in high schools, academies, and colleges? What proportion of the students of that subject now usually acquire abiding interests in Roman literature?

4. In a liberal arts secondary or collegiate education, does it seem essential to you that Latin or Greek be prescribed for all? Should not these subjects always be open for election by students in large schools? Why?

5. What are, in your estimation, the chief "educational values" to be derived from four years' study of Latin as that subject is now standardized? Consider separately: discipline of memory; light on the origins of English words; better mastery of English grammar through comparison with Latin grammar; vivid insight into some portions of ancient literary culture; same, of ancient history and geography.

6. Assume that in a large high school fifty girls enter each year who are: above the average in ability; likely to go to women's colleges; as yet without keen or distinctive cultural interests; probably destined to marry well, and to be socially influential, if not prominent, in their later community life. These girls will study substantially what the school recommends for their kind. Assume colleges willing to admit on fifteen units of any approved studies. You are asked to advise, where choices must be made, as to whether these girls had better give four years to Latin or to: a modern language; two years of biological and two years of social sciences; two years of home economics and two years of graphic arts appreciation. By what standards of "educational values" would you recommend these choices?

7. Assume yourself undertaking the study of Spanish to the point of easy reading knowledge. You can give about twelve hundred hours (through six years) to such study. Would it probably be better for you to give the first two years to Latin and the next four to Spanish? Or all six to Spanish?

EDUCATIONAL VALUES OF LATIN AND GREEK [1]

For many years controversies have raged in various countries as to the educational values of "the classics." Nearly all American colleges long required Latin for admission. The more conservative do yet in the case of candidates for the A. B. degree. The grounds for this requirement have not always been the same. It has been variously held that the primary values to be realized through the study of Latin are: (*a*) possession of *the,* or at least *a,* necessary language of learning; (*b*) participation in that part of our social inheritance, especially humanistic, which centers in Roman literature and history; (*c*) mental training through vigorous study of an unfamiliar language; and (*d*) improved command over expression and apprehension of English as results of acquaintance with certain sources of English, and with the grammar of another language.

[1] Read also D. Snedden, *Sociological Determination of the Objectives of Education* (Ch. 5, The Essentials of Liberal Education without Latin).

Opposition to the privileged positions of Latin and Greek has grown largely in proportion as other subjects become sufficiently well organized for purposes of secondary or collegiate education. Obviously, the basic problem is one of *relative values*. Few would contend that Latin and Greek possess no educational values for students sufficiently well endowed to pursue them—values, that is, either from the standpoint of their own welfare and satisfactions, or from that of the social groups in which they are to live and serve. But many hold that students required to give one fourth or one eighth of their school time for four years to these classic studies are thereby deprived of opportunity to study other things that would be of more value to them—again in their individual capacities, or in relation to their social responsibilities. Originally the more desirable alternatives were alleged to be the natural sciences; then the modern languages; again the social sciences; or now the "practical" studies.

These battles, inevitably, have been waged in the fields of belief and speculation as to comparative educational values. Only rarely does it seem to have occurred to the disputants that these values might vary greatly according to the native abilities or acquired powers of learners. Only now are attempts being made to test these values scientifically—attempts that, in the very nature of the case, must remain tentative as long as underlying standards of educational and social value are themselves as subjective and hypothetical as they still are.

Recent discussion has brought into relief certain aspects of the general problem that were largely obscured in earlier controversies. It is now commonly agreed that the "mental training values" of Latin are specific rather than general, and that its "historical and archæological values" are much smaller for the typical student of to-day than has heretofore been contended by protagonists. The advocates of Latin seem now to place in the foreground the alleged contributions of that study to greater mastery of English. But, obviously, the social values of such enhanced mastery can only be measured by standards that are still largely subjective and tentative. Is it really very important in a democracy that men of good abilities should learn to write "fine English," or to read English with much discrimination? Those rare minds which are capable of producing genuine literature must, obviously, be excluded from the argument, since it is not in evidence that any amount of education beyond simple literacy greatly affects their creative genius. At least, that seems a reasonable inference when we consider the Shakespeares, Whitmans, Bunyans, and numberless other self-educated contributors to literature.

The great social prestige shown by the classics during the last two

centuries was acquired earlier. Then Latin and Greek were in reality languages indispensable to scholars and publicists; and the literatures in those languages must be known by all men of the Western World pretending at all to erudition. In a very real sense, these were then the leading humanistic studies.

The humanities are commonly understood to be those studies that enlarge the vision and increase the spiritual possessions and values of men. The social psychologist can not doubt that each generation of any people produces a few who combine high gifts of intelligence with exceptionally strong predispositions toward altruistic service on the one hand, or toward esthetic perception on the other. Whether the "crossing" of races produces these variations in greater abundance, as is often asserted, is still an obscure problem in human heredity. But there can be little doubt that certain minglings of cultural heritages give these choice spirits environment and opportunity which serve to cultivate in marked degree their special talents. They grow by what they feed upon. They compete with each other for whatever distinctions their era and social situation make valuable.

Such men—we may call them leaders or artists, scholars or saints, reformers or pioneers, according to circumstance—naturally and inevitably turn toward the richest lights of which they can learn. In the centuries from the thirteenth to the end of the sixteenth the men of this kind who appeared in western Europe—including Italy—must perforce attach high values to the Grecian and old Roman arts and learning which were then being resurrected. The vernacular languages were still formative, and their literatures chaotic and incipient.[2]

The humanistic studies for such persons were first of all the long buried literatures of Greece and Rome. In these survived finished form, penetrating vision, a wealth of suggestion of ordered art and scholarly composition. Eventually geniuses from Dante to Chaucer inaugurated a new vernacular literature, but for centuries after them men of scholarly inclinations still relied heavily upon the classics. The Christian Church and the aristocracy of learning largely favored such reliance, and not uncommonly study of Greek and Latin became a pedantic end in itself instead of a means to the culture and power that could be put to social service.

The new humanities—do they still include the ancient languages and literatures? For some rare spirits, probably yes. For the great majority of those who nourish great gifts of talent toward the service of the art,

[2] Consult P. Monroe, *History of Education.*

science, and leadership that shall enrich civilization, distinctly no! During the first two decades of the twentieth century students of the social sciences in American colleges and universities multiplied manyfold. Rarely have these social sciences—economics, sociology, interpretations of history, anthropology, social psychology, social economy, and other divisions—been found in the lists of "required" studies. Nevertheless they have been eagerly sought—and in many cases by men and women of much the same aspirations and abilities as those of the humanists of centuries earlier. Motives of social service, of expanding useful and beautiful knowledge, and of otherwise bringing happiness to the world, have been much the same as those supporting the earlier humanities.

PROBABLE FINAL ADJUSTMENTS

The long struggle of the proponents of Greek to maintain a privileged position for that subject came definitely to an end some years ago. The reaction seems to have carried Greek undeservedly low. There would seem to be no good reasons why certain minority groups of students in large high schools and colleges should not be encouraged to pursue that as one of their select "cultural" subjects. For those who have talent and time the rewards of such study should be great—comparable to those to be derived from devoted pursuit, over a series of years, of certain kinds of music, of a modern language and its literature, or of some field of science.

Latin still retains a much "protected" position, especially because of its prescription in the admission requirements of prominent colleges. But it is doubtful whether such prescription will long continue. The historic faiths that have heretofore sustained it are now steadily declining. It is highly improbable that the researches now being prosecuted will reveal any unique educational values to be derived from the study of Latin as now standardized.

Proposals are sometimes made looking to the teaching of Latin as a "living" language. Conversational methods are employed by a few teachers of exceptional enthusiasm. But why all this pother—except on behalf of that small proportion of students having the kinds of ability, time, and enthusiasm necessary to make of this a field of special culture?

Latin, as a study of language and literature, like Greek, will presently find its place among the cultural electives that a generous system of secondary and liberal arts college education may be expected increasingly to make available to our prospective cultural leaders. Not many

will elect the subject—but those who do will naturally become radiating centers of enthusiasm and interpretation, thus contributing their special quotas to the "culture" of their society as a whole.

Special studies derived from Latin may yet be developed as means of training in appreciation or execution of English. "Word analysis" has long had such a rôle. Possibly "short unit" courses in word derivation or comparative grammar will yet be found to serve valuable purposes in secondary education as electives for those especially interested in appreciation of English writing as a source of culture, or in the effective writing of English.

CURRENT PROBLEMS OF OBJECTIVES

Solutions of two kinds of problems must be had before the final positions of Latin and Greek in school and college can be determined. First, what are the actual values to different classes of students of the studies that could replace Latin and Greek? Second, what are, specifically, the cultural or other values actually to be derived, again by several potential groups of learners, from the classics?

The following are some of these specific problems that still await solution:

1. It will be conceded that, whatever the position ultimately given to Greek and Latin in schools, it is desirable that the American people should always have some persons enthusiastically devoted, avocationally, to keeping alive, and in prosecuting further researches into, Old Irish, Norse, Chinese, Hebrew, Arabic, Sanskrit, Inca, Greek, Roman, and other ancient sources of culture. What proportions of individuals ought to develop these interests if our national culture is to be broad and dynamic? Where should they be expected to begin to cultivate these special interests?

2. If experience proves that moderate amounts of study of Latin serve valuable purposes in the liberal education of students expecting ultimately to take a Bachelor of Arts degree, is it desirable that opportunities be provided for the election of such study as early as the seventh grade in junior high schools? Or would it be best to advise students to defer such study until the tenth grade?

3. For what classes of students, and to what extent, in comparison with other studies, can Latin or Greek literature and related subjects be made to serve as "humanities" or vital "humanistic studies" under twentieth-century American conditions?

4. How do the values to be derived from study of classic literature in translation, as well as from the study of the history and social life of Greeks and Romans through secondary sources in English, compare with the values to be derived from study of the original classics?

5. Certain sciences and professions obviously employ Latin largely as a source of technical terms. Law and theology also derive from it a variety of formulæ and significant citations. To what extent does secondary-school Latin constitute helpful preparation toward using these applications? What amount of labor would normally be required to master these roots and other sources if special "short unit" courses designed for that purpose were offered in professional schools or in connection with courses in biological science?

6. What are the actual contributions made by two or four years' study of Latin toward helping in the mastery of French, Spanish, or Italian? Would any similar contributions be derived toward mastery of German? Russian? Japanese?

7. To what extent does study, brief or prolonged, of Latin or of Greek, aid students in realizing the several objectives of advanced study of English speech, writing, and appreciative reading? Does it contribute to "building of vocabulary"? To comprehension of grammar? How will these contributions vary for students of different abilities? Different interests in quality of their English?

SUMMARY

It is submitted that a majority of those well informed educators who have had serious occasion to consider the *comparative educational values* of all the subjects that can now profitably be taught in schools and colleges would support these principles:

1. Neither Greek nor Latin should be "required subjects" in (*a*) any secondary school, (*b*) for admission to any ordinary college degree, or (*c*) for admission to any professional school.

2. Neither Latin nor Greek is entitled to "preferred" positions in school or college curricula on account of their superior values as mental "gymnastics" or training.

3. Every large secondary school and college should offer elective courses in the Greek and in the Latin language, with the explicit intention that students taking them should be only those of superior abilities and interests in these fields who would expect to follow introductory study of these

languages by extensive study of the literatures in them. But certainly only for most exceptional reasons should a student elect *both* Latin and Greek in the secondary-school period.

4. Junior and senior high schools might well offer a short unit elective course of perhaps sixty hours in "word analysis" or "word derivation" as a part of its English-language offerings.

FOR SUPPLEMENTAL READINGS AND REPORTS

BENNETT and BRISTOL. *The Teaching of Latin and Greek in Secondary Schools.*
CORCORAN, C. *Studies in the History of Classical Teaching.*
KELSEY, F. W. *Latin and Greek in American Education.*
SLAUGHTER, M. S. *The High School Course in Latin.*
WEST, A. F. (editor). *Value of the Classics.*

CHAPTER XV

ENGLISH LITERATURE

INTERPRETATIONS OF EXPERIENCE

SINCE the invention of printing, at least, the culture of a people is more certainly indicated by its interests in good reading than in any other way. To make a people literate is not necessarily to assure the prevalence of interests in literature, as American experience testifies. We are very much a reading people; but by conventional tests our prevailing cultural standards are not high, nor are our tastes fine.

Recent years have seen great advances in the teaching of literature in schools—and in all grades. What are the fruits thus far? Each reader of these pages is, in a sense, an exhibit. Why was literature taught to you? What part does literature now play in your life?

1. Analyze and describe some of your present interests in literature—novels, short stories, drama (for reading), biography, classical poetry, modern poetry, essays, etc. Where and how did these start? What part was performed in initiating or nurturing these interests by educational agencies—schools, courses in English, libraries, lectures, and the like? In what ways did you spontaneously develop some of these interests? Which of them, in your estimation, are distinctly adult interests—that is, not normally to be expected in children or adolescents?

2. Try to interpret what your interests in literature have meant to you during the last five years—separately considering such values as: intellectual recreation when wearied by work; easing of mind and spirit in seasons of trouble; giving insight into relatively unknown aspects of life; sheer pleasure from beauty, imagination, and humor; and causing you to feel yourself the equal of cultivated persons. Do you find other values to report?

3. In the light of your experience, should we expect the tastes and interests in literature that can normally be developed to differ widely among various classes of adolescents and adults? Do girls or women exhibit some literary interests that differ from those exhibited by large groups of boys or men? Are these interests probably closely correlated with intelligence? With artistic appreciation? Vocational pursuits? Wealth? Schooling? Do women or men read more of fiction? Modern poetry? The *Saturday Evening Post?*

4. Try to interpret, in terms of the experience of yourself or of others whom you have observed, the phrase "literature interprets [or is] life itself." Does this mean "all life," or some one section of it? Apply to: a novel of

Scott, Dickens, or Hawthorne; some recent short stories; the Iliad; Kipling's *Kim; Hiawatha.*

5. "The study of literature elevates us morally and spiritually." Is this true in your experience? Do all kinds of literature do it? Which kinds in greatest degree? Does such elevation depend much upon the reader's interest? What are some examples of literature that have, in your estimation, spiritually changed large numbers of people? Separately consider: the Book of Job; *Pilgrim's Progress;* Dickens' *David Copperfield;* Kipling's later poems; Whitman's poetry; Shakespeare's *Hamlet;* Winston Churchill's novels; *St. Elmo;* Thoreau's *Papers;* the novels of Harold Bell Wright; other examples.

6. What seem to you to be some of the "spiritual" or other values of the short stories now so abundantly produced and read? What are essential differences, not in technique, but in effects on readers, as between those found in the higher class magazines, and those found in Sunday papers and low-priced magazines?

7. To what extent does it seem to you a desirable and worthy function of literature to provide "pure diversion," or intellectual recreation? From what kinds of literature do you derive most of these effects—classical or recent novels, poetry or prose, short stories or long? Is it your opinion that many people, tired by their work, could or would get intellectual recreation from: George Eliot's novels; *The Education of Henry Adams;* Whitman's verse?

8. For purposes of educational science should we accept the critic's definitions and tests of literature—or should we include under that term all non-technical reading matter (technical reading being that of other school subjects of specific vocations)? If we accept the former position, then we must establish a second subject, "general reading," which is confusing. Let us, therefore, take here the second position. What objections do we find to including supplemental readers, ordinary newspaper and magazine reading, children's stories, stories of travel, biographies, and standard classics all under the term "literature," as that is to be used in discussing educational objectives?

9. Why should we use school time and money to "teach" literature? The mechanics of silent reading once mastered, a large proportion of young people take "naturally" to literature and preserve reading interests—frequently tawdry or "low-brow" ones—throughout adult years. Is it desirable that Americans should read yet more widely than now of: daily newspapers; cheap magazines; popular fiction? Why?

What are the actual values of "much reading" of political kinds? Vocational? Esthetic? Informational? Answer from your own experience, and as an observer. Is literature one of our best and most available means toward "the wise use of leisure"? Can literature debauch or degrade as well as uplift?

10. Can we defend the thesis that, as respects literature, the first purpose of the school should be to insure permanent interests of some kind, and then

to strive toward the establishment of higher, more noble, more refined, more spiritually nurtural appreciations and interests? In light of these general objectives, what are the more valuable types of literature respectively for:

a. Ages four to six?

b. Ages six to nine?

c. Boys and girls, ages nine to twelve, considered separately?

d. Same, ages twelve to fifteen and further classified as of inferior, average, and superior intelligence?

e. Same ability levels, ages fifteen to eighteen, from urban environments?

f. Same, rural environments?

11. How, in a scheme of literature for schools, shall we relate the classics to contemporary literature? Which is the more important to adults? Which can better remain to be "self-taught"?

Do moderately well cultivated adults now read abundantly, or even moderately, of: Milton, Dryden, Pope, Matthew Arnold, Whittier, Browning? Addison, De Quincey, Burke, Taine, Carlyle, Newman, Emerson? Shakespeare? Fielding, Scott, Cooper, Thackeray, Dickens, Hawthorne? What, for Americans, should be expected interests in translations of: the Iliad, *Divine Comedy, War and Peace* (Tolstoi), *Crime and Punishment, Les Misérables?*

How do the foregoing seem to compare in interest for adolescents with more recent productions now in process of becoming classics—by Kipling, Van Dyke, Roosevelt, Burroughs, Muir, Lew Wallace, Mark Twain, Tennyson, Lagerlöf? For what types of readers were the classics originally written? Interpret, for several of the above, the *milieu* in which each was written, and which is necessarily reflected in them, as respects: scientific knowledge of the world; prevailing relations of men and women; popular attitudes toward war; prevailing religious beliefs; relations of "upper" and "lower" social classes; prevailing interests in nature; beliefs in a future life, etc.

LITERATURE IN SCHOOLS

Why teach literature in schools? The cynical assert, in the first place, that we never have taught "literature" in our schools, and in the second place that literature can not be taught there. There is a measure of truth in each contention, and likewise much untruth.

There is abundant evidence in old school and college textbooks that until very recently educators sought to teach what was believed to be essential knowledge *about* literature. Especially common in former years were histories of literature—books containing condensed biographies of scores, if not hundreds, of famous authors, with brief extracts from their best known works. Representative authors from Chaucer to Tennyson

were each given space sufficient to contain a record of the dates of their births and deaths, lists of their works, and perhaps a few outstanding events of their lives and associations.

In later books, especially those for secondary schools, the numbers of authors to be studied is somewhat reduced, and ampler extracts from their works are given. Almost within our own generation the study of one or more complete works of an author—a novel, a drama, or a long poem—was fostered in secondary schools by college admission authorities. But, aside from what might be called the persisting historical purpose, it would appear that the controlling aims in the study of these selections were chiefly *rhetorical*—that is, they were studied analytically to discover essential characteristics of structure, style, historical setting, and the like. College admission requirements in composition and rhetoric, as well as in the "history of literature," have thus far controlled in the determination of nearly all well defined objectives.

It is doubtful whether, under these conditions, many teachers thought seriously about "appreciations" as an aim, in the sense in which the term is now frequently used. It was obvious that large numbers of students retained no permanent interests in the classical literature they had dissected and memorized. But, it would have been contended, they were at least "well informed" as to the great literature in the English language, and as to the technical factors that make such literature great. Their later literary interests they must choose and make for themselves.

Literature in the elementary school has had a very different history. For centuries, probably, the "readers" were composed in large part of choice literary selections, which as literature were frequently "over the heads" of all but the ablest pupils. But in the later decades of the nineteenth century the elementary-school curriculum was "enriched" very generally with supplemental readings, not only in geography and history, but in those other general readings of stories, romances, poems, and dramas that constitute in fact a large part of the literature of childhood, whether the critical ones call it "literature" or not. Some selections—*Evangeline, Snow-Bound, The Lay of the Last Minstrel,* and others were frequently designed for intensive study, in imitation of high-school methods. But much the larger portion of it was for free reading in school or at home. The more progressive schools provided libraries of those books of good quality which appealed to the tastes of large numbers of children. Public libraries often coöperated by setting apart children's rooms and developing helpful lists of children's books. By these means

reading interests have been nurtured and established among large numbers of children.

OBJECTIVES

The objectives of the school study of literature are, nevertheless, still largely unsettled. Is it of any considerable importance that we teach to all secondary-school students the *history* of literature—interesting as that study may prove to the few desiring to elect it? Few educators will now answer that question affirmatively. Neither will many now contend that any considerable time should be given to the analytical study of literature for the purpose of increasing knowledge of rhetoric or of promoting abilities in writing compositions.

The primary purpose of the school in teaching literature should be to establish permanent interests in reading—and preferably in good reading. That would probably now be given by a large majority of educators as the most important general objective—the one that should practically control in the choice of selections, flexibility of offerings, and methods of teaching. They would further agree that the tastes and interests which it is practicable to produce will vary greatly among individuals—perhaps between sexes, and in some correspondence with native abilities. Interests in current magazine articles, in the less "artistic" fiction, and in other popular current books, constitute from this standpoint valid educational motives—to be expanded, refined, and elevated, certainly, as far as practicable. Pursuit of these objectives has already greatly affected the teaching of literature in elementary schools. Their influence on high-school curricula is already in evidence, but in lesser degree as yet.

But all this leaves the larger issues still in doubt. What, after all, are the "goods," social or individual, that result from painstaking establishment of these literary interests? What are the different values of "good" and of "cheap" literature? Books on literature, almost always written, naturally, by gifted persons who have long cultivated tastes for what is held to be technically superior literature, greatly exalt various "values" alleged to arise from study of "literature"—as they define it. But these writers deal excessively in "counsels of perfection." They seem to take no account of inferior minds, mediocre natural foundations of esthetic or intellectual interest, or preoccupations with other concerns. They are aristocratic rather than democratic—in the cultural sense—in their outlook upon life. They are "high-brow," whether they know it or not. Their

contempt for "popular" magazines, novels, and poetry is usually withering. Their respect seems great for the man who "when he hears of a new book rereads an old one."

These connoisseurs are a seriously disturbing force to educators. In their warfare upon the commonplace they seem to forget the needs and potentialities of common minds. They ardently espouse, or bitterly condemn, the ideal of "art for art's sake," complacently ignoring the implications of democratic culture. Because so many of these superior critics occupy chairs in higher institutions of learning they greatly affect the standards of taste acquired by secondary-school teachers. The latter seldom develop confidence in their own judgments. But they are the ones who encounter the limitations and variabilities in adolescent response. They are the ones who must still bear the brunt of the questions, "Why should we teach—or try to teach—literature? What literature should we try to teach? Toward what socially or personally 'worth-while' ends should we teach it?"

The social world about us must give us our first clues to solutions of these problems. Among all progressive peoples are now to be found large numbers of adults in whose lives literature plays substantial rôles. Busily employed persons on farms, in offices, and in other departments of the world's work are using various forms of literature for intellectual recreation—and almost in the strictly physiological sense of that term. Incidentally to this, these readers may grow steadily in certain kinds of vision, taste, largeness of social spirit. Probably it will be found that the majority do so, if their lives be followed from young manhood into the years when the burden of their vocational and civic responsibilities is somewhat lessened.

Others, possibly with more will or surplus energy,—among whom Theodore Roosevelt was certainly a chief,—very deliberately address themselves to specific and ordered tasks of self-cultivation. They not only read for "profit,"—cultural, civic, even vocational,—but they build steadily toward higher levels. Sometimes literature is for them "an end in itself"; but more frequently it is also a means toward the larger insight, appreciations, and service that appeal to them as being most worth while.

Is it, then, safe for educators to postulate two major and perhaps somewhat mutually opposed "values" to be realized through study of literature—the recreative, and the "spiritually upbuilding"? Uncritical persons sometimes allege that both values can or should accrue from the same sources; but this seems contradicted by general social experience, except

in the case of men of extraordinary energy. Perhaps our schools should clarify and vitalize both ideals for their pupils, and point the ways to their continuing realization through some purposive division of time and labor.

The recreative values of literature are much in evidence in modern life. Millions of men of active body and mind, working often to the point of nervous exhaustion, find rest and diversion in the pages of the *Saturday Evening Post, Adventure,* and scores of other similar journals. Perhaps the intellectual activities stimulated by such reading are comparable to the physical activities inspired by golf, motoring, and fishing. These readers take little pride in their literary interests or achievements. Literary critics are, naturally perhaps, most contemptuous of them. But these interests are clearly among the most real and widespread of the products of education for literacy. How shall we evaluate them? What shall be a sane and constructive attitude of, say, high-school teachers of literature toward them? Perhaps we no more need to "teach" for these interests than we have to teach interests in the "movies" or in the eating of maple sugar. But that does not relieve educators of responsibility for ascertaining where these "naturally acquired" interests in literary reading belong in the entire scheme of educational values.

Nor can these educators afford to ignore the related physiological and hygienic considerations. We talk much, these days, about education for leisure and the values of recreation—physical, intellectual, social, and avocational. Recreations for men who draw heavily on their energies in work must not in turn constitute a heavy drain. Is the significance and justification of "light reading" to be found in that fact?

The social or spiritual values of literature—what are they as evidenced in the various societies about us? In what ways is the "educated" utilizer of literature a better man for his own purposes, or for the purposes of his fellows in family, party, church, and nation? In what ways is the man of uneducated literary interest—in all or in some kinds of literature—"short" or defective in larger usefulness to himself, his associates or his federates? These questions indicate the necessary starting points to any fundamental sociological inquiries into the "values" of literature. Extensive research, guided especially by social psychology, will be necessary to their final elucidation; but some important findings can, as stated above, be reached simply by interpreting our every-day experience.

Let us not forget that many of the more enduring, as well as not a few of the more recently popular, of writers use their art largely as a means toward larger moral ends. Certainly Sophocles, Tasso, Dante,

Milton, Bunyan, Tennyson, Dickens, Whittier, Whitman, Olive Schreiner, Tolstoi, Kipling, Wells, Harold Bell Wright, and Shaw have done so. It is not easy to read their works for intellectual recreation alone. If we insist on keeping company with them, they will conscript our wills and sentiments in spite of ourselves. Many of these writers are, of course, not "meat for babes"—and perhaps it is vicious pedagogy to introduce babies in years or in minds to them. But the principles established by their work hold, probably, all down the line, if "high-brow" educators could but realize it. Many a Boy Scout story has its spiritual message to-day for at least some boys of fourteen. Girlhood's interest in the Alcott stories is not without significance to promoters of "spiritual" education. Literary connoisseurs may sneer when a first printing of a new novel by Harold Bell Wright runs off seven hundred thousand copies—but the social psychologist will find in that fact something profoundly hopeful.

Some of the social values of great and difficult literature are, of course, made available for the world at large indirectly or at second hand—that is, through the popular writers and other interpreters affected. Just as the values of higher mathematics or colloidal chemistry are incalculably great, even though only a few men are able-minded enough to acquire and apply such knowledge, so the values of the creative thinking and writing of a Dante, Milton, Samuel Butler, Whitman, Hauptmann, Tagore, or Dreiser may be very great, notwithstanding the difficulties of popularizing his writings. The effects of these geniuses percolate downward through the intellectual leaders who are affected by them.

This fact explains, in part, the undemocratic impatience of critical connoisseurs with "second-rate" and popular literature. They make the common mistake of assuming that what their gifted and sophisticated tastes find novel and stimulating can likewise be found so by the multitude. These critics have always been, and must perhaps always be, bewildering if not harmfully misleading guides to educators responsible for providing studies and courses in a democratic system of education.

LITERATURE AND LIFE

"Literature interprets life" is a vague though much used generalization that greatly needs interpretation in the light of social psychology. Every epic, novel, story, poem, essay, and drama doubtless attempts to interpret some phase of life, and that, first of all, in terms of the writer's prepossessions and ideals. The interpretation may be fundamental and

true, or superficial and false. It may be very significant in one age and for one people, and quite without interpretive value for another people and time. "Human nature is always the same," it is said; but practically this may express a misleading half-truth. In one sense the basic "nature" of the contemporary Arab may be similar to that of the Illinois farmer; but in terms of social behavior the two are widely different, due to dissimilarities in tradition, culture, religion, and civic standards.

Milton wrote his great poems in a social atmosphere and in relation to conditions that were widely different from those prevailing in an American commonwealth to-day. His poetry interprets at least part of life—that is, its aspirations, reactions, understandings—as he knew it. How significant are his interpretations for our times and social conditions? His world knew little of modern science, transport, methods of war, or social ideals. It conceived politics, religion, and art very differently from ourselves. Even the affections and relations of the sexes, the most nearly universal theme of literature, differed then in many essential respects from the corresponding situations of the present.

To what extent, then, and in what ways, can Milton's writings interpret our life to us to-day? It may help to interpret the life of a past epoch; but only persons with strong historical interests care much for the past. May not this fact explain in large measure the meagerness of contemporary interest, other than historical, in Milton's works? They have little message for us, notwithstanding their artistic splendor. They do not interpret our problems for us—problems of the future life, of international relationships, of the social adjustment of contending economic forces, of the conservation and extension of democracy, or even of insuring better foundations for family life. They are like seventeenth-century furniture—interesting as antiques and as splendid examples of other-day workmanship, but not well adapted to present-day needs and established tastes.

But there are many complicating factors. Small children, and perhaps not a few adults, take delightedly to tales and romances that are constructed around the doings of fairies, dragons, glorious knights, entrancing princesses, and other unworldly creatures of some distant time or region. They find no incongruities in seven-league boots, supermen, and magic. The literatures of the heroic ages are filled with imaginings of these kinds that take no account of steam engines, telephones, printing presses, smokeless powders, canned foods, biological science, political democracy, or trade unions. Hudson's "Green Mansions" finds not a

few entranced readers among the very practical workers of American cities. What part does such literature play in the cultural nurture of a twentieth-century American people?

Again, there are the exceptional minds to consider. Dante's Purgatory appeals to some, obviously, for reasons quite apart from the artistic technique of its structure or its historical setting. These readers, having had certain profounder philosophical curiosities aroused, find Dante's reflections suggestive and enlightening. But such interests, obviously, lie far outside the range of the intellectual interests of average men.

Social psychology, then, strongly suggests that much of the literature that is to "interpret life" for men of the more common kind must do so largely through the medium of situations and conditions that are already understood and appreciated. Hence the vogue of stories, novels, poetry, biographies, and the like, that either speak the language of the every-day experience familiar to such men, or else interpret remote situations in terms of the simplest of human implements, emotions, and conceptions and problems.

ENGLISH LANGUAGE AND ENGLISH LITERATURE AS SCHOOL STUDIES

The word "English" is a favorite one with makers of curricula. It often means "English language" and sometimes "English literature," but too frequently it designates a vague and rather footless combination of both, especially in modern high schools. In these the same teacher is commonly employed to teach composition and other branches of the vernacular language, as well as the quasi-historical subject called English language.

Though our knowledge of the actual objectives that should control in the teaching of literature is yet obscure, nevertheless it is very certain that they are only slightly and remotely related to the objectives which should control in vernacular language training. A very good case could be made out for the desirability of having persons of quite unlike temperamental and educational qualities teach each of these two subjects in secondary schools. It ought to be expected that, in the very nature of the case, an enthusiastic and competent teacher of literature would be a reluctant and sorry trainer toward the specific proficiencies that make for good spoken and written English. Probably very many of the good or moderately good teachers of English language now in our high schools are teaching literature in serene obliviousness to the real cultural and social results that should be derived from it.

It will be urged, of course, that even if the objectives of the two types of studies are far removed from each other, nevertheless they should be taught in close correlation. Again the delusion of economy or effectiveness to be attained through some teamlike combination of dissimilars! It is very doubtful whether close analysis of desirable and practicable objectives will show feasible openings for practicable correlation. Pronunciation must be improved chiefly in the realms of daily use. Certainly our pupils can not be expected to emulate the authors they read as respects qualities of literary expression. If they are to write sincerely and with force they can only express that which comes from their own intimate experience and reflection.

Many problems of method will be encountered when objectives are once clearly established. It is predicted that then:

a. It will be found that valid objectives of literature and of English are so far asunder as to negate the desirability of teaching them to any considerable extent in close correlation.

b. It will be found highly desirable in junior and senior high schools to have different teachers of literature and of the English-language studies.

c. Literature will only rarely be taught through the definite class organizations that are necessary for the usual "projective" studies.

d. It will be found feasible to have a large portion of the "learning" of literature accomplished outside the school.

FOR SUPPLEMENTAL READINGS AND REPORTS

BATES, ARLO. *Talks on the Teaching of Literature.*

CARPENTER, BAKER, and SCOTT. *The Teaching of English* (Ch. 3, (2) Literature in Secondary Schools).

CHUBB, P. *The Teaching of English* (Ch. 9, 10, Reading in the Grammar Grades; Ch. 13-16, Literature in High Schools).

CORSON, H. *The Aims of Literary Study.*

FAIRCHILD, A. H. R. *The Teaching of Poetry in the High School* (Ch. 1, Introductory).

JOHNSON, H. *Teaching of History* (Ch. 15, Correlation of History with Literature).

KING, I. *The High School Age.*

QUILLER-COUCH, A. *On the Art of Writing.*

SHEDLOCH, M. L. *The Art of the Story Teller* (Part I, The Art of Story Telling).

THOMAS, C. S. *The Teaching of English* (Ch. 7, General Principles Governing Choice of Literary Selections; Ch. 9, The Teaching of Prose Fiction; Ch. 12, The Problem of Outside Reading).

THORNDIKE, A. H. *Literature in a Changing Age* (Ch. 1, Changing Literature; Ch. 2, The Reading Public; Ch. 3, The Literary Inheritance; Ch. 10, Beauty and Art).

WELCH, J. S. *Literature in the School.*

CHAPTER XVI

THE MATHEMATICAL STUDIES

INTERPRETATIONS OF EXPERIENCE

CERTAIN historical conditions have made the American people attach high values to the mathematical studies in schools of all grades. Settlement of the frontier has always brought before the common people many problems of boundaries, dimensions, and contents of land and timber. Pioneers are nearly always in some degree traders. New Englanders early became shipbuilders and navigators. Technical leadership has been much in demand by those developing our numerous corporations. Always the poorly educated owners of mineral lands, live stock, timber, and unsurveyed lands were being victimized by the shrewd man of figures.

Then, too, arithmetic, algebra, and geometry seem always to have combined two qualities which made them a precious stock in trade for the peripatetic master in rural school or academy: they were relatively easy for the initiated to teach; and they were impressive, if not awe-inspiring, to the uninitiated. The tenets of the now discarded "faculty psychology" fitted in admirably with the feelings of mysticism which the powers of surveyors, navigators, double-entry bookkeepers, bill clerks, and other experts aroused in the breast of the poorly educated man. It was inevitable that the "dogma of formal discipline" through mathematical studies should maintain a long ascendancy, especially in the minds of those self-approving, successful laymen who represented the public in governing the schools of the democracy.

The mathematical studies have lately fallen somewhat from their former high estate as respects general prescription. No well informed person doubts their very great and increasing importance in modern civilized life. In the worlds of science, manufacture, transportation, mining, building, and commerce, applications of mathematics play rôles analogous to skeletons in the bodies of vertebrates. They preserve definite form and articulations of the various parts and functions.

But education is now confronted by a wide range of problems as to desirable purposes and scope of mathematics teaching in the various schools. How much arithmetic is needed by all? For what purposes? How many and what kinds of people should be required or advised to study the several secondary school mathematical subjects as now standardized? The following questions will bring some of these problems into relief:

1. What applications do you recall having made within the last year of these phases of arithmetic: long division; tables of square measure; tables of troy weight; simple interest; division of decimals; true discount; cube root? Recall applications that you think were made by your associates.

2. What is the usual extent and character of the *arithmetical knowledge and abilities of exact performance* frequently used by you or your associates in these connections: making change; calculating prices of goods bought or sold (assuming that you are not a merchant); reading daily papers; making investments; pursuing further studies? In what respects have you experienced *shortages* or *defects* in your arithmetical abilities recently? In what respects do you regret not having had more training in that field?

3. Assume that school curricula were so reorganized that all mathematics especially needed for vocational purposes—by engineers, bookkeepers, bank clerks, plumbers, farmers, lumber merchants, life-insurance salesmen, elementary-school teachers, and the like—could and would be taught in the special vocational schools, or in elective prevocational courses, for these vocations; and that the purposes of general arithmetic and other general mathematics were only to provide for our common non-vocational needs, such as buying (for general utilization), reading, conversation, investing, and cultural appreciation of the world in which we find ourselves. What topics, and what difficult aspects of retained topics, could well be omitted from arithmetic as now usually taught in the first eight grades? What topics or phases should perhaps receive even greater emphasis than is now customary?

4. Having in view the rank and file of persons, some of whom find it desirable to make investments in stocks and bonds, what kinds of knowledge should they have of these in order to invest wisely? How much of this knowledge is primarily *arithmetical?* How much *arithmetical* knowledge does the average person need for the ordinary requirements of buying life insurance, paying taxes, keeping a bank account, lending money?

5. In a certain suburb, nearly all the children attend school at least to sixteen years of age. The parents of a considerable portion do not send children to school until eight years of age. Does it seem desirable that systematic arithmetic should be taught in first and second grades?

6. Why should algebra, plane geometry, trigonometry, and solid geometry be studied by any high-school pupils?

7. Why should algebra and geometry be prescribed for admission to engineering schools? To liberal arts colleges? To schools of law, theology, and medicine? To normal schools for elementary-school teachers?

8. What seem to you to be the prevailing needs of (*a*) higher arithmetic, (*b*) algebra and geometry, and (*c*) trigonometry by these workers: dentists; artillery officers; dry-goods salesmen; live-stock farmers; real-estate agents; bank cashiers; architects; expert accountants; home-makers; stenographers

(girl); teachers of modern languages; electrical engineers; oculists; hotel cooks; carpenters?

9. What are the prevailing needs of mathematics for the following college studies as ordinarily organized in "liberal arts" courses: English literature, Spanish, chemistry, home economics, economics, ancient history, English history, physics?

10. Why should girls be required to study algebra? What vocations do they enter in any considerable numbers in which algebra demonstrably functions? Does it appear ever to "function" in such vocations as those of nurse, stenographer, waitress, elementary-school teacher, home-maker, saleswoman?

11. What can you formulate as possible "cultural objectives" of the study of algebra or of plane geometry? Do persons of high-school education seem to you to possess, at thirty years of age, "appreciations" of the parts played in modern life and achievement by mathematics substantially superior to those possessed by persons of equal native ability, but without secondary-school training?

12. "Hard work" on problems of algebra and plane geometry contributes, it is often alleged, in important measure to mental discipline or mental training. Endeavor to formulate out of your own experience the factors in this contention. Does such study seem to have "taught you to think"? To think about the closely related mathematical facts, or about all kinds of facts—historic, literary, domestic, spiritual?

Have you ever tried to apply your "reasoning powers" to the study of fine art of any kind, psychology, or biology? Has it seemed that the "reasoning powers" trained in the study of algebra and geometry have helped you here?

13. Would you be in favor of leaving algebra and plane geometry (as the subjects are now standardized in college entrance requirements) on a purely elective basis, with the stipulation that any student planning to enter the engineering vocations should be required to pass exacting tests in these subjects before beginning study of engineering?

14. A number of recent writers have prepared texts, adapted to eighth or ninth grades, containing the simpler and more practical topics of algebra, geometry, advanced arithmetic, and even topics from other departments of mathematics. Does it seem expedient or desirable that such a subject should be "prescribed" for all? What are other subjects that will probably have to be omitted if that is done?

VALUES OF ARITHMETIC

Elementary arithmetic clearly ranks with reading and writing as among the most valuable and necessary tools of civilized society. When European and American frontier society was emerging from illiteracy, it was inevitable that a tremendous premium should be placed on arithmetic.

Certain phases of it were almost indispensable in all forms of buying and selling.

Discussion of the question, "Why should arithmetic be taught?" is, for obvious reasons, quite fruitless until we shall have defined the scope and content of the subject. Even then we shall find ourselves forced to treat of specific topics and cases. No educator would dispute the advisability of requiring all normal, and a large proportion of abnormal, pupils in our schools to learn the "essentials" of arithmetic. But what are these "essentials"? Do they include compound interest, cube root, apothecaries' measure, the principles of "alligation alternate," the metric system of square measure, the "inverted" problems of profit and loss, the processes of finding largest common divisors when these include large prime factors, and the methods of computing volumes of cylinders? Should they include probable vocational needs (always specialized), or only those "general" needs experienced by all, quite apart from vocation to be followed?

That the objectives of arithmetic formerly held (and even yet by the majority of conservative educators) were fundamentally absurd is becoming slowly manifest to the more inquiring educators of our time. Those objectives are implicit in textbooks and examination questions for prospective teachers or for promotion in the grades. Some future historian of education will find it a fascinating theme to discover how, in the evolution of literacy and of commercial proficiency in this country under social conditions always influenced by the frontier and often by the sea, topic after topic has been added to the body of "arithmetic." Until recent years, addition and not subtraction was the process by which the subject was built up. The pedantic ingenuity of schoolmasters reinforced the demands of practical men toward the complication of common topics by means of abstract and unreal "problems."

Such a historian will find many causes for the evolution of arithmetic as that subject had become shaped during the last twenty-five years of the nineteenth century. Since straight "verbal memorizing" has been pedagogically discounted as a method of learning, arithmetic has probably been the easiest subject in which half-competent teachers have been able to procure the semblance of good "work."

Arithmetic serves two very unlike purposes in society. Certain portions of the very extensive body of technical knowledge and practical skills making up the subject are largely functional in the *daily utilizing life* of all of us. Hardly a day goes by but that we must make change, compute time between two dates, or calculate the total price of an article, the

value of which is expressed in terms of units. Very frequently we use our knowledge of a few simple denominate numbers, or make simple calculations on a percentage basis. These common operations call for quick and sure applications of addition, subtraction, multiplication, and, usually, for only the very simplest of fractions and decimals. In reading we occasionally encounter numbers expressed in Roman notation.

Consumers' arithmetic—as used by all adults and even by many children in all their *utilizing processes,* such as buying, reading, appreciative understanding of conversation, estimating quantitative conditions about them, simple investment, and minor transmissions of money—is, obviously, the universal arithmetic that determines the proper aims of *general* education in that field.

Vocational arithmetic also plays a very large part in the world's life and work. But, obviously, it has always been specialized, and it tends year by year to become more specialized. Certain kinds of inerrant ability in adding, subtracting and multiplying we associate with the bookkeepers' vocation (or did before the use of calculating machines became general). But only one person in perhaps a thousand follows bookkeeping as a vocation. Similarly, it seems obvious that the plumber and steamfitter very much need certain kinds of arithmetic that may well be "Greek" to the rest of us. The machinist, the building contractor, the lumber merchant, the note teller in a bank, the electrician, the navigator, the well-driller, the compositor, the bookbinder, the jeweler, the pharmacist—all of these have, certainly, their indispensable needs of some very specialized forms of mathematics—often of arithmetic only.

Our forefathers naturally thought that the "school" should prepare their pupils as far as practicable for *any* possible vocation—at least, it seemed practicable to do this in so bookish and compact a subject as arithmetic. So they piled into the advanced textbooks in that subject the special forms of arithmetic supposedly needed by sea captain, gold-buyer, drug-compounder, wall-paper man, hay merchant, discount clerk, tea-blender, bricklayer, and stock broker. These forms of arithmetic were all very valuable—none could dispute that; therefore they were valuable for *all*—was not that an easy inference to make in a democracy? Hence our dismally overloaded general arithmetic.

Mental arithmetic suffered the same fate. The most generally used arithmetic is, of course, non-written. Accuracy and speed in several kinds of non-written operation are, obviously, valuable components of consumers' arithmetic. But it became easy for mathematically ambitious school board

members and teachers to make a hobby of mental calculations of all sorts, and then to impose the subject upon their pupils, in the faith that it was good mental discipline.

The objectives of arithmetic, desirable and feasible for general education, remain yet to be defined and delimited, in spite of much progress recently made in disposing of the accumulations of the last three generations. Sociological foundations of proper standards are not yet clearly in evidence. Studies have been made which show the topics and phases of topics in most general use among adults; but these do not yet make satisfactory discrimination between consumers' and producers' needs. It is here held that the elementary school should, at least in the first six grades, not concern itself at all with producers' needs for vocational arithmetic.

The desirable specific objectives of arithmetic are to be studied, first of all, through analysis of needs of adults as utilizers. Even now it would be readily practicable, given necessary resources, to obtain fairly scientific solutions to such problems as these:

PROBLEMS

What are the kinds, and of each the usual scope, of mathematics sufficient to meet in reasonable degree the needs of these utilizers? A. Men and women living in New York City, traveling to Europe once in ten years; income per family group at the rate of five to ten thousand dollars a year; they are general readers of daily newspapers and best magazines; they buy bonds or stocks and take out life and other insurance only on advice of brokers. B. Wage-earning artisan workers; income per family group, fifteen to twenty-five hundred dollars; investments made usually in savings banks; read ordinary newspapers, but few books; have difficulty in understanding economic political questions, but not necessarily due to lack of mathematical abilities.

These problems could readily be investigated through a systematic study of the utilizing activities of a few cases selected at random from within each group to be studied.

Shortages or defects in consumers' mathematics, as at present mastered, could be studied in the same way. What are these shortages of which individuals are conscious? What are shortages which they do not appreciate, but which students can discern, that impair their usefulness to themselves or to society? It is possible to study some of these shortages in particular respects. For example, assuming that large proportions

of the readers of a given journal could readily interpret graphs of simple kinds, would such a journal materially increase its use of such graphs, and to the advantage of its readers? Again, assuming that investors possessed fairly large command over the mathematics of insurance, bonds, partial payments, and commissions, would it considerably improve their abilities as investors?

VOCATIONAL MATHEMATICS

Specialized applications of mathematics, as noted above, constitute essential portions of the technical knowledge of many vocations. Electrical engineering, bookkeeping, pharmacy, lumber merchandising, ship navigation, house-building, electric wiring, machine-shop practice, bookbinding, surveying, and some others are vocations in which it is relatively easy to define the kinds and scope of applications of mathematics commonly made. It would appear that special applications are rare or largely unknown in the vocations of street-car motorman, minister, high-school teacher of Spanish, cigarmaker, cook, actor, sailor, gardener, and hundreds of other professional and non-professional callings.

Farming, home-making, and several other *composite* vocations require some technical mathematics, but whether the amounts so needed extend much beyond the limits of *consumers'* mathematics has not yet been clearly ascertained. It has previously been shown that all consumers need to know the simple mathematics of number reading (Arabic and Roman), addition, subtraction, and multiplication of whole numbers, the simplest operations with fractions and decimals, and the rest. To what extent would such knowledge prove insufficient for the usual needs of the home-makers of rich or poor, urban or rural, homes?

ALGEBRA, PLANE GEOMETRY, TRIGONOMETRY, AND SOLID GEOMETRY[1]

Two, at least, of these subjects have for many years claimed the lion's share of the "hard work" of our high-school pupils. Algebra and geometry are still prescribed for admission to virtually all American colleges, normal schools, and other higher institutions. Until very recently the educational values of these two members of the mathematical studies have not been questioned. It has long been evident to Americans that they were indispensable as tools in the engineering professions. The easy inference that

[1] See also D. Snedden, *Sociological Determination of Objectives* (Ch. 6, The Objectives of Mathematics).

they were of some value also in the other higher pursuits has been easy. Nevertheless the vogue of the studies in our secondary schools has been due chiefly to the doctrine of mental discipline that has so long served as a defense of courses having inadequate or esoteric objectives.

The time is now ripe for a reëxamination of these alleged values, particularly those of algebra and plane geometry. It should, in the first place, be an easy matter to determine the scope and character of probable vocational needs (including those of professional studies) for these subjects. It should furthermore be an easy matter to determine how far study of these subjects by methods now prevalent in our schools contributes to the realization of cultural objectives as these may be properly analyzed and defined. Present psychological theory and demonstration may not give us entirely satisfactory grounds for establishing the limits of their disciplinary values; but it is sufficient to enable us to view with much skepticism dogmatic valuations and practices entailing the prescriptive and enforced study of them. Many educators are now quite ready to place both algebra and plane geometry in the list of purely elective subjects for school and college, always with the reservation that they be prescribed for candidates seeking admission to those professional schools in which they demonstrably serve as necessary tools.

MATHEMATICS IN JUNIOR HIGH SCHOOLS

Many of the problems of the place of mathematics in that enlarged system of secondary education which includes schools of general and of vocational education for substantially all pupils from twelve to eighteen years of age can be brought into sharp relief by considering the problems of objectives now confronting the junior high school.

The junior high-school type of educational organization is steadily winning its way administratively. But pedagogically it seems to be making little progress. Thus far its curricula show no very significant changes from the curricula of the schools or grades which it has superseded.

The difficulties encountered in modifying the traditional subjects, courses, and curricula of seventh, eighth, and ninth grades are due largely to prevailing uncertainties as to educational aims. We have, as yet, few clear conceptions as to what we should seek to do, educationally, for all upper-grade children in common, or for the various groups into which they can readily be divided.

The historic elementary-school type of organization of courses for pupils from twelve to fifteen years of age rendered flexibility of curricula impracticable, if not impossible. The slow and the fast, the mechanically inclined and the mechanically stupid, had all to pass through the same mill. Theoretically, courses in mathematics, as in other subjects for these ages, were shaped to meet the needs and fit the powers of the average pupil. Practically, that ideal was very rarely realized to any considerable degree, Poorly informed theorists in fields of social need and child psychology—including, primarily, ambitious text book makers, but also large numbers of sea captains, merchants, engineers, contractors, lumbermen, and successful farmers who exercised strong influence on school boards—usually dictated the topics and problems that were to be regarded as "approved" arithmetic.

The resulting courses and methods are well exhibited by the textbooks in mental and written arithmetic widely used in this country from 1830 to 1900. As pedagogical products these were certainly grotesque and tragic in many respects. Fortunately for the consciences of both the victims and the perpetrators of these outrages, there prevailed during that era two ideas, having virtually the force of educational dogmas, which justified in their own minds the educational hierarchy of those days. The first was that upper-grade schooling was only for the intellectually elect, in any case; and the second was that the precious asset of the "trained mind" was best realized through mathematical topics, and especially problems, which in their tortuous complexities went far beyond the realistic situations appearing in every-day life. All of the arithmetic offered was, of course, interesting to some minds. A small percentage of persons are so endowed mentally that they take the same delight in wrestling with the fictitious problems of mental arithmetic, geometry, chess, puzzles, and the authorship of Shakespeare's dramas that others take in hunting or in the competitions of athletics. But the satisfaction of the interests of this minority was poor compensation to the millions of youths of average abilities and pressing needs who wrestled away precious time and energy on non-functional arithmetic.

The gradual but certain substitution of the junior high-school type of organization for all pupils between twelve and fourteen or fifteen years of age is destined to work revolutions in uniform and prescribed curricula. Just as the older type of organization virtually compelled blind uniformity in offerings, and automatically frustrated all serious attempts at adaptation of courses to varying needs and powers, so the new type of organization

will almost certainly bring into unescapable relief the widely variant conditions affecting educational potentialities which are always to be found among considerable groups of learners compelled or electing to attend school between the ages of twelve and fifteen. With regard to any possible offering we shall find ourselves increasingly obligated to answer the questions: Is it very desirable for group A? For Group B? Is it of more importance to group C than something else to which these learners could devote their available time and energy.

Several conditions of comparatively recent evolution will help develop, if not render necessary, the flexibility here referred to. The last quarter of a century has been prolific in the development and formulation of new and valuable subjects of school instruction. For pupils from twelve to fifteen years of age there are still available such historic subjects as arithmetic, grammar, written composition, geography, and American history. But, in addition, a wealth of material of very great educational value to at least some pupils, and through them to society at large, has been organized in such fields as literature, current events, industrial arts, bookkeeping, general science, physical training, hygiene, graphic arts (execution and appreciation), music, household arts, gardening, word analysis, oral composition, modern language, Latin, algebra, constructional geometry, mental science ("how to study"), community civics, civil government, scouting, school self-government, typewriting, and others.

Again, all children between twelve and fourteen are now required, or soon will be required, to attend school. In the "good old days" large proportions of the children of these ages who had lost interest in school, or who were mentally slow or morally difficult, were either allowed silently to fold their tents and steal away, or else they were no less quietly "elbowed out" of school life. Now we have them all with us; and since the mountain of their abilities (or deficiencies) will not come to the Mohammeds of uniform school standards, these standards must go to them. That change of front spells more kinds of curriculum flexibility than we have yet dreamed of.

In the third place, modern psychology gives scientific formulation to what has always been empirically surmised as to the very great variabilities in native powers and potentialities of the children of men. The psychologists are now laying one set of foundations for the scientifically flexible school offerings of the future; the sociologists, interpreting social needs, may be expected to build the other foundations.

GENERAL AIMS

As a background for discussion, let us assume the existence, in an educationally progressive city of from two to three hundred thousand population, of a large, well equipped, and well staffed junior high school accommodating sixteen hundred pupils, all of whom have completed the sixth grade. (Retarded pupils over twelve years of age will probably also be found here, but will be assigned to special classes in mathematics, and need not, therefore, be considered here.) Only grades 7 and 8 are provided for in this school. Full-time attendance is assumed to be obligatory to the fourteenth birthday.

School authorities are confronted by the problems of making and administering curricula for this school. They find that the partizans of many "subjects" are desirous that their respective favorite studies shall not only be given prominent place in the curricula, but shall, if at all practicable, be required of all pupils. It seems generally agreed that all pupils should be required, in both seventh and eighth grades, to give substantial amounts of time to the various branches of oral and of written English, English literature, American history, civics, geography, and hygiene. It is also agreed that acceptable pupils should be permitted and, as far as practicable, advised to elect Latin, a modern language, English grammar, industrial arts, manual training, gardening, household arts, drawing, ancient history, physical training (sports or scouting), vocational guidance, current events, bookkeeping, word analysis, and others.

In the field of mathematics (including all phases of arithmetic) the authorities find that if they assume the arithmetic prescribed for grades 3 to 6 to have been well taught according to standards of aim and method now found in the better American urban elementary schools, these will be among the unanswered questions as to junior high school offerings:

a. What courses in mathematics is it practicable to offer in the curricula of large junior high schools?

b. Should all pupils be required to take in common certain courses or portions of mathematics?

c. Should all be required to take specified minimum amounts of mathematics, choosing, under advice, from the various courses offered?

d. Should all mathematics courses be placed in a list of electives, to the end that pupils may, with the approval of their parents, and aided by competent educational advice, choose to take much, little, or no work in

this field, provided their programs are properly complete with other valuable studies?

e. Should certain pupils be debarred from specified courses?

CASE-GROUPS INVOLVED

First consideration must be given to some of the "case-groups" involved, primarily as a means of estimating educational needs and values rather than of adjusting individuals. The method is analogous to study of the problems of "applied" chemistry in laboratory stages rather than on commercial scales.

The "case-group" method of approach to the study of desirable educational objectives and of comparative educational values in mathematics presents many difficulties and some obvious uncertainties. But are there any alternative methods? Deductive and *a priori* reasoning have certainly had their many days in court in the making of curricula. Educators still talk about that hopeless abstraction "the child" or "the junior high school pupil." They say, "Should not a boy learn to find unknowns by means of right triangles?" What kind of boy—blind or sighted, white or colored, weak-minded or strong-minded, one who will probably be a farmer, or one who will probably work in the learned professions?

Profitable consideration, then, of these problems of prescribed vs. elective mathematics requires that conditions of the needs of society, the personal needs of learners, and the probable opportunities of these, be given as concrete analysis and description as practicable.

It is safe to assume that, among the eight hundred boys and eight hundred girls in the seventh and eighth grades of this junior high school:

a. A minority are of inferior intelligence or native ability, another minority are of superior rank in these respects, and that a majority range from somewhat above to somewhat below the average or mode of the intelligence standard employed.

b. A minority come from inferior family and social surroundings, another minority from superior surroundings, and a majority represent "modal" social environment.

c. A minority will leave school about as soon as the law permits, another minority will go through to graduation from high school, and a majority will probably leave between the ages of fifteen and seventeen with from a seventh- to a ninth-grade school education.

These various minorities and majorities have probably some educational needs in common; but surely they also have many needs that are special

to classes rather than general to all, when their own or their society's best interests are consulted.

It is sociologically desirable and practicable to study this school population under several "case-group" classifications. Of the children who are below the average in ability, some come from poor and crowded homes, some from homes with ample resources. Experience shows that nearly all children of the first group leave school soon after the fourteenth birthday and become largely self-supporting. Children of the second group remain several years in school and may not have to become self-supporting until they are past twenty years of age. Out of all the studies, mathematical and non-mathematical, that can be offered in seventh and eighth grades, what 30 per cent. (all that their time and learning abilities permit them to take) are "best" for these groups—that is, have for them the maximum of "educational value"?

Among the sixteen hundred pupils there will probably be one hundred boys of good to excellent mental power, and backed by prosperous, ambitious parents. They will nearly all go to college. Another hundred boys of no less ability will come from homes that can contribute little or nothing toward their support during attendance on high school, to say nothing of the greater expenses of college. What curricula of courses should be recommended to each of these groups?

COMPARATIVE VALUES

It is safe to assume that each of the studies named earlier would possess some educational value for all kinds of pupils, if there were no competing studies of superior worth to which available time and learning energy should be given. No reasonable person could object to having all these pupils study or practise some Latin, French, algebra, manual training, vocal music, or scouting, if the only other available studies left ample time and energy for these.

But the actual situation in the contemporary junior high school is far otherwise. Time is available, on the part of any learner, for only a minority of these studies, if to each is allotted what experience indicates as a reasonable "content." Assuming an 8-hour school day and a 200-day school year, junior high school students have at their disposal during two years only 3200 hours, of which certainly not more than 2200 hours can be given to "academic" studies as distinguished from shop work and sports. The serious problem before us, then, is that of the relative values of subjects. "What knowledge is most worth?" to revive Spencer's famous

query. If choices must be made by individual pupils between such pairs as French or algebra; vocal music or advanced arithmetic; industrial arts or commercial arithmetic; drawing or one year of composite mathematics—what shall be advised or required? Like the offerings in the menu of a modern hotel, all the offerings of the up-to-date junior high school may be good; but no one needs, or can find it practicable, to take them all. But what is best for one type of learner may be far from best for another. In view of the wide differences among various groups of pupils, common sense suggests that there should be wide differences in offerings.

What kinds of mathematical courses could, if desirable, be taken by at least some of the pupils here under consideration; or what kinds of courses could be advantageously offered by the school? Experience to date suggests the following as practicable in any large junior high school:

a. An advanced, fairly "stiff" two years' course in arithmetic of the type that has been largely traditional heretofore in seventh and eighth grades.

b. The more able-minded pupils certainly could take "pure" algebra and plane geometry, slightly simplified from the standards now commonly held for these subjects in ninth and tenth grades.

c. A one year's course in "constructive" geometry is feasible.

d. A one or two years' course in "composite" mathematics (blending the methods of arithmetic, geometry, algebra, in their application to relatively general and realistic problems of practical life) is certainly to be deemed practicable in the light of recent studies and texts.

e. A one year's course (or even a two years' course) in "commercial" arithmetic (or mathematics), centering largely in the problems arising in the business transactions of buying, selling, and accounting.

f. A one year's course, centering largely in problems peculiar to general farming.

g. A one year's course, centering largely in problems peculiar to home-making.

h. A one or two years' course, centering largely in problems peculiar to mechanical shops and the building trades.

i. Though no good examples yet exist, it is theoretically possible to work out a substantial one year's course in almost pure "utilizer's" mathematics beyond the standards achieved in the first six grades, topics being restricted to those based on the common needs of large numbers of men and women in buying, reading, and modest investment.

j. It is also theoretically possible to provide one or more courses in

pure "appreciational mathematics" of a liberal or cultural nature, just as it is possible to have "appreciational" courses in poetry, music, general science, or drama. Historical materials might play a part here, as they do in appreciational courses in music, fiction, or graphic art—but surely only a minor part. True appreciation should center primarily in vital contemporary achievements; historical beginnings may be somewhat illuminating, but that is all.

k. Finally, it is practicable to offer, in "short unit" or other form, courses in "review" arithmetic, designed primarily to keep in vital and functioning form over the "forgetting" years of childhood the "utilizers' " and fundamental arithmetic learned in the first six grades.

All of these courses in mathematics are certainly good for society; that is, it is important to our composite social well-being that some learners, at least, shall learn well the kinds of knowledge and practice indicated. Each one of these courses is very good, perhaps the best possible, for certain types of pupils. Equally, each one of these courses would be relatively unserviceable, if not a positive waste of time, for certain other types of pupils. Perhaps, in view of possible alternatives, it would be educationally wicked to force the less fortunate pupils of the school (in brains and parental resources) to spend any time on some of them. How shall problems of "optimum adaptations" be approached? Let us return to the "case-group" method of inquiry.

ONE TYPE OF NEED

Among the eight hundred girls between twelve and fourteen years of age in any junior high school of the kind here under consideration, there will probably be found from fifty to one hundred and fifty who do not vary greatly as respects these characteristics: they are below the median intelligence of girls of their age; and their home environment is below the average as respects most of the qualities that make for thrift, aspiring citizenship, fine (rather than high) standards of living and companionship, and interest in personal advancement.

Because of the conditions noted, these girls will, with rare exceptions, be but slightly interested in school work. Some will be slangy and bold, others taciturn and furtive. All will be greatly interested in showy clothes, street parade, "fellows," and the "movies." Perhaps half are rapidly developing interest in cheap reading.

It is practicable to predict with substantial accuracy the futures of these girls. They are all eager to earn money and to get somewhat away from

the boredom of their uninteresting schools and cramped homes. They will leave school almost as soon as the law permits, and enter upon the hundreds of varieties of wage-earning work which all modern cities offer in abundance to their nimble fingers and ready submissiveness. Most of them will be wage-earners in cigarette factories, box-making establishments, ten-cent stores, laundries, restaurants, and the like, between the ages of fifteen and twenty, after which the rate of marriage among them will be large. Before they reach the age of twenty-five, more than 80 per cent. will have married—in nearly all cases young manual workingmen who may expect to have a hard struggle to support families.

A large proportion of these girls will, as young wives, be ill prepared for home-making responsibilities, partly because their mothers gave them little training during school years, and partly because they were in effect only boarders in their own homes during their wage-earning years. They will have fairly large families of children, whom they will rear under adverse conditions of housing, permanent residence, and cultural surroundings.

Neither as girls nor as women will the case-group here considered be interested or competent in "politics," unless their schooling is made very different from what it now is. Many will vote, but only as led by plausible candidates and popular prejudices.

If we were making a curriculum only for these girls in the junior high school seventh and eighth grades, what should we (*a*) prescribe, and (*b*) advise, and (*c*) prohibit, out of all studies and other educational activities now known to be practicable for junior high schools? They have left for schooling only thirty-two hundred hours at most. The school is clearly under obligations to do its utmost for them in a "compensatory" way—that is, to correct defects of grammar, morals, civic ideals, thrift, and the like, due to their environment or inferior abilities.

Certainly no competent educational authorities will propose that these girls be required, or even advised, to study algebra. Could they make any use of partial payments, compound interest, cube root? Is constructive geometry important for them? To what extent is it desirable that they study graphical methods of representing and comparing quantities? What should they, what can they, ever know of the equation?

Take another fairly well defined "case-group," consisting usually, in a school of this size, of from fifty to one hundred and fifty boys who combine these two assets: they are from prosperous, often cultivated homes; and they are substantially above the average in intelligence. A very large proportion will have the time, the means, and the desire to enter higher institu-

tions of learning. They will not need to become self-supporting until some time after attaining their majority. In later life they will probably work so hard as seriously to impair their health. Practically all will become good, conforming citizens, and many will develop large potentialities for dynamic or initiatory civic activities, if sufficient will and understanding thereto can be developed.

What mathematical courses should be planned for, and recommended to, these boys? Probably either the "straight" algebra and geometry or a thoroughly stiff composite course. While no one can now predict that all of these boys will later take up higher studies or vocations requiring such mathematics, they can at least be advised that such election will be a good gamble, even after the colleges shall have ceased to worship the idols of obsolete psychological traditions in their admission requirements.

But, while we should recommend to these prospective collegians the taking of preparatory mathematics, we should steadfastly resist the superstitions of college entrance committees that these subjects possess such magic virtues as justify their prescription for admission to all colleges or college departments. There are many professions to-day that employ applications of mathematics above arithmetic in only slight degree, and then only in such specialized forms that it is probably both feasible and economical to teach the necessary procedures when met with, rather than earlier. Some of the boys of the case-group under discussion will later study theology; others will prepare to practise law; a few will desire to become teachers of ancient or modern languages; possibly two or three will devote themselves to the graphic arts or music. Would realistic "job analysis" studies show that in these callings any considerable need will be encountered for the use of applications of algebra or geometry? One can, of course, easily adduce rare instances where theologians have wished to employ mathematical analogies, or where lawyers have foolishly preferred to rely upon their own knowledge of equations, imperfect at best, in trying cases involving patents, or titles to mining land, instead of seeking the aid of specialists in these things—as they certainly would in matters involving toxicology, bacteriology, or chemistry. But such cases are rare exceptions.

CONCLUSIONS

1. The pupils attending any junior high school represent wide ranges of abilities, conditions, and educational needs.

2. The possible educational offerings of such a school are steadily

increasing in number and variety. None of these are equally necessary or valuable for all pupils. Each one is probably very valuable and important for some pupils. The junior high school may be expected to repeat the history of the liberal arts college and the senior high school as respects the range of subjects that may profitably be offered. Under these conditions, obviously, the responsibility of the school in recommending, prescribing, or prohibiting to each distinctive group of learners certain studies becomes very great.

3. It is practicable and probably desirable to offer in the large junior high school a variety of mathematical courses—perhaps not fewer than eight nor more than twenty distinctive one-year courses.

4. If proper attention has been given to essential "utilizers' arithmetic" in the first six grades, it is submitted that careful study of the most urgent educational needs of the various case-groups will prove that there is no mathematical topic or course that need thereafter be prescribed for all pupils alike.

5. Subject to the one condition stated below, it is probable that careful analysis of the educational values of the large variety of different subjects that can and should be offered in the junior high school, as these minister to the respective educational needs of various case-groups, will establish the inadvisability of prescribing certain quantities of mathematical study, of one kind or another, for all pupils; provided that pupils of less than average ability shall, in response to tests given from time to time, demonstrate that their "utilizers'" mathematical knowledge learned in the first six grades remains actively "functional."

6. All mathematics courses in the junior high school should, therefore, be placed in an elective list from which individual pupils should be advised and helped, with the consent of parents, to select those that will most probably meet their personal and social needs.

7. Where courses are especially designed for pupils of superior abilities, it is, of course, legitimate to bar from them pupils of less than the required abilities.

FOR SUPPLEMENTAL READINGS AND REPORTS

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CHAPTER XVII

THE NATURAL SCIENCE STUDIES

THERE are literally scores of sciences from which schools, from the kindergarten through the university, must increasingly draw the materials or means of liberal and vocational education. For purposes of this book these sciences will be grouped in three principal divisions—the natural, the mental, and the social sciences.

Pedagogical literature exhibits much confusion at present as to why, when, and where "sciences" should or can be taught. A part of the difficulty grows out of technical controversies as to what is "scientific" and what is "a science." In view of the prodigious developments of scientific knowledge now taking place in almost all the natural, mental, and social sciences, educators would probably be well advised if they would cut the Gordian knot by disclaiming, on the one hand, any intention of teaching "a science" below the university graduate or professional school; and, on the other, by asserting their readiness and determination to teach young people anywhere between the ages of four and twenty-five, or beyond, those things taken from science that it proves practicable and profitable—in cultural, health-conserving, and civic senses, as well as vocational—for these persons to learn in any manner or degree.

Children of six can readily and advantageously be taught some things from astronomy, zoölogy, bacteriology, and chemistry. Children of eight or nine can not be taught "economics" or "physiography"—perhaps these "subjects" are difficult enough for college juniors; but it is a simple matter to teach them certain essentials from these scientific fields. It would be folly to try to teach average young people at thirteen years of age those logically organized bodies of scientific knowledge called social psychology and educational psychology; but few well informed educators doubt that within a few years we shall be making important use of "takings" from these sciences in the general education of such learners.

Let it be understood, then, that even when such words as *chemistry, botany, economics,* and *psychology* are used in this book, it is never implied that these subjects can or should be taught comprehensively or exhaustively. The respective schools, it is assumed, will be increasingly disposed to be

selective of those elements or applications from fields of scientific knowledge which possess optimum value and significance for the learners concerned—cultural significance sometimes, vocational significance at others, and again significance toward conserving health or sharing well in civic action.

In view of current educational usage, it is advantageous to discuss the objectives of the natural sciences in schools under these heads: (*a*) General Science; (*b*) The Physical Sciences; and (*c*) The Biological Sciences.

A. GENERAL SCIENCE

INTERPRETATIONS OF EXPERIENCE

Very small children now learn almost unconsciously from their older associates much scientific knowledge that was a sealed book even to the learned among their ancestors not many generations ago. With almost no perceptible effort or conflict of ideas, they learn that the sun does not go round the earth, that eclipses of the sun are due simply to shuttering by the moon, that there are invisible "germs" that give us disease, that certain night flying mosquitos bring malaria, and that there are no real leprechauns.

The childhood understanding of each one of us was a mixture of true and false knowledge. Many adults among us still hold as true medical and political beliefs which are probably fully as absurd as the thirteenth-century beliefs that the earth was the center of the universe or that witches caused certain diseases and catastrophes. Under the spell of the authority of those whose judgment we trust, we accept, without curiosity or inquisitiveness, the scientific truth of many things. A recent writer said that probably not one hundred people in the United States really understand why the "movies seem to move"—in the profounder physiological sense, that is. Yet no one looks upon them as magic, or in any way beyond explanation by purely natural law. Electricity plays its numberless rôles in our daily lives without exciting any more wonder than does dropping and flowing water.

What extra-school education begins for us we can extend and somewhat organize in school education. For some decades educators, aspiring to enrich education, have been looking to "nature study" as a means. Sometimes enthusiasts have taken that subject so seriously as to defeat their own purposes. The same fate may yet overtake the advocates of "general science." Like nearly all other "subject-matter" enthusiasts and partizans, they desire: that all children should learn the same things, or the essentials or the principles, of the subject; that the subject should be made compulsory for all; and that it should be used largely as a center of correlation for other subjects. Naturally, such partizans are little interested in "comparative educational values," nor are they interested in the greatly variable interests or, in these special fields, educabilities, of children.

1. When you were from five to eight years old, what were some of the phenomena of nature as to which you early acquired fairly "truthful" interpretations—changing phases of moon, movement of electric cars, telephony, phonographic speech, migrations of birds, and the like? What were some phenomena that you interpreted mystically or otherwise unrealistically—plants alleged to be dangerous, spirit agencies, thought transference, and the like?

2. Recall a variety of neighborhood superstitions which you once shared to some extent, and discuss your present attitude toward them.

3. How do you explain your comparative incuriousness as to such wonderful phenomena as: the long migrations of birds; the forces that push or pull sap up in trees; the supposedly animal origins of all mineral oils; the causes of the earth slips that produce earthquakes; the facts of lightning?

4. In teaching children from six to twelve years of age more than they would otherwise know of general science, is it at all important that all children, or even any considerable numbers of them, should learn (*a*) the facts about the same phenomena, (*b*) the underlying principles, or (*c*) the ultimate utilities of such knowledge? If some learn only about beach life and some only about furry creatures, will either group seriously miss what the other has?

5. If, in teaching children of these years, your time permits you to take only one of each of these pairs of topics, which will you choose, and why: the tides or the sprouting of seeds; magnets or the nesting of birds; economic service of birds or distant volcanos; snow crystals or expansions produced by heat?

6. What are some kinds of scientific knowledge and interests which you or your friends have which are respectively primarily (*a*) cultural, (*b*) health conserving, (*c*) civic, or (*d*) vocational? Trace some of these to their origins in (*a*) schools or (*b*) environment.

7. Looking forward for the next twenty years, what are some kinds of natural science knowledge which you think you should or will desire to obtain for these respective purposes: vocational success; better civic participation; improvement or retention of health; cultural satisfactions?

THE OBJECTIVES OF GENERAL NATURAL SCIENCE

Let us assume a large junior high school, well equipped, and proposing to offer among its electives four half-year courses of general science in grades seven and eight. Why should such courses be offered? To what classes or kinds of pupils would they be recommended? What should be the standards of attainment expected? What methods should govern in the work?

First, what is "general natural science," and how much of it is there?

For the purposes and learners here under consideration, it seems proper to assume that all apprehensions and all correct interpretations of natural phenomena belong under natural science. The child who sees a new kind of bird, learns the distinctive name of a planet, reads about the behavior of the rhinoceros, or feels the prick of an electric current, is thereby adding to his scientific possessions. When he is helped to follow the processes from the planting of a bean to the emergence of two wonderful "leaves"; when, after some guidance, he discovers that bits of steel wire can be magnetized, whilst splinters of wood can not be magnetized; and when he reads that there are places in California where scarcely any rain falls because north and south running mountain ranges in some way cut off the rain winds from the Pacific—he is laying the foundations of his structure of scientific knowledge.

A prodigious wealth of scientific materials are now available for use in the junior high school—a hundred, perhaps a thousand times as much as any one average pupil could possibly assimilate. Each of the great sciences can contribute a large quota that is alluring and culturally significant—astronomy, geology, physiography, oceanography, meteorology, physics, chemistry, bacteriology, botany, dendrology, ornithology, ichthyology, and scores of others.

But it is perhaps dangerous to the pedagogical sobriety of educators to begin erecting the subject of general science by means of possessions brought from the special sciences. Better turn to those massive phenomena which confront, or are reported to, learners from their environment, and begin the quest for some further understanding of them in each case. What and why are volcanos? Crabs? Tornados? Watches? Pestilences? Petrified ichthyosaurs? Tides? Diseases on the leaves of potatoes? Intolerable temperatures in deep mines? Diamonds? Electric drive steamboats? Mineral oils? The Palisades?

Perhaps "exploratory" and some other "projects" can be devised to promote assemblage of scientific data and interpretations drawn from the several fields that merge in great facts of individual or collective experience. "Find a large amount of information about our city water supply." "What do we know about mosquitos?" "Tell the story of the San Francisco earthquake." "Make a fairly extensive study and report on 'big game in Africa.'" "Construct a small electric generator according to directions." "See if we can make an old motorcycle engine run." "What did Pliny have to say about the eruptions of Vesuvius?" "Can we raise a good crop of potatoes on four hundred square feet of soil and keep them free

from pests?" "Give a demonstration of the action of yeast." These could be multiplied many times, obviously. We should have no difficulty in filling our four short courses, ten times over.

But why teach general science? The old question recurs. Unless we can answer it, to our provisional satisfaction at least, we shall have, not only no acceptable criteria for choosing from the wealth of materials referred to, but no very satisfactory defense of any offerings at all.

These theses are submitted on the negative side:

a. We should *not* teach general science primarily for its "practical" values. Pupils of the ages under consideration will need some scientific knowledge toward health conservation; but that objective should be realized through the study of hygiene, and not general science. Later they will require "related technical" science in vocational training; but that, too, is another largely unrelated matter.

b. Again, we should *not* teach general science primarily to enable pupils to master basic principles. It is too early for that. The attempt invariably formalizes and deadens science teaching. It did much to quench the nature-study movement. Incidentally, of course, many principles and laws will be appreciated, if not apprehended; but such attainments should be by-products.

c. Furthermore, we should *not* be too insistent on using general science to interpret the environment. Under some conditions the Aurora Borealis may be more significant to curiosity and cultural interests than the current that drives the local street car; tigers in India than sparrows on the back lot; and the big trees of California than the elms of the local highway.

d. Course materials must *not* be compressed within the limits of single textbooks.

The objectives of general science instruction may in part be formulated in the light of these principles:

a. Out of the vast ranges of general science available for this junior high school it is of no momentous importance which offerings we bring into our courses, provided: (1) the teacher is keenly interested in the offerings finally introduced; (2) experience shows that some pupils can be vitally interested in them; and (3) available facilities make practicable their fairly full and rich teaching.

b. The portions of these offerings upon which pupils specialize may be widely variable. Under some conditions it is conceivable that no two pupils in a given class would be "working on" the same topics, problems, or projects—reading, exploring, experimenting, constructing. From

time to time they would hear each other's reports. Naturally, there would be frequent interchange of impressions, discoveries, queries.

c. The subject should be held as essentially developmental toward general culture. Therefore its basic methods should be those of intellectual play, including spontaneous assimilation of intellectual nurture. Good results are determined in studies of this character (as contrasted with projective studies) far more by interests, personal appreciations, and individual achievements than by *what* is learned in common.

d. Obviously, no textbooks can be of much service. Rather, there should be provided *sets* of books, varied guide sheets to laboratory, exploratory, and project work, and laboratory facilities as extensive as practicable—but not necessarily great or of high order. Much extemporizing should be expected. The *Children's Book of Knowledge* is anticipatory of what we shall yet have in form more adapted to junior high school conditions.

B. THE PHYSICAL SCIENCES

INTERPRETATIONS OF EXPERIENCE

1. What are some interesting and, in your estimation, cultural items of knowledge, grasp of general ideas, or vital curiosities that you now possess in relation to: the chemistry of explosives; the surface of the moon; the probable sources of mineral oils in the earth; some effects of the "Ice Age" on the surface of the United States; the processes of manufacturing steel; the chemical composition of the sun; the formation of images by lenses?

2. Recall the "cultural attainments" of certain of your acquaintances in the foregoing or other similar matters. Have their possessions of this cultural knowledge proved sources of keen satisfaction to themselves? To others?

3. What are some of the valuable contributions of knowledge to a scientific farmer (of a species to be stated by you) to be had from physics—and especially from each of such divisions as optics, magnetism, properties of matter, hydrostatics, pneumatics, acoustics, and the like; chemistry—or its divisions dealing respectively with alkalis, acids and salts, metals, etc.; meteorology; astronomy; mineralogy; geology; physiography?

4. You are asked to select from the entire fields of physics and chemistry certain topics that might well be studied fairly intensively by a girl of sixteen (who has previously had only some general science) who will soon take up intensive study of home-making. What topics would you select?

5. Assume yourself called upon to outline an "appreciation" course in chemistry and physics of which the equivalent of sixty hours—five hours a week for twelve weeks—was to be given to "civic" physical science, with especial

reference to sanitation and public health. What topics would you select for the latter purpose?

6. Assume yourself called upon to provide a thirty hours' course in appreciational or cultural astronomy for election by tenth-grade pupils in high school. What topics would you select, and what methods of teaching would you employ?

7. Of the following "natural sciences," all of which have been adapted to purposes of secondary education, which are the "most important"—physics, chemistry, physiography, geology, astronomy, zoölogy, botany, biology, bacteriology, physiology? Why?

Which of the foregoing are probably most important to specified groups of high-school pupils for "vocational" reasons? Which for "cultural" reasons? Which for reasons of physical well-being? Which for "civic" reasons? Which for reasons of mental discipline or training in "scientific method"?

What kinds of "vague" knowledge or appreciations do you possess in each of the above fields? What deficiencies trouble you? Do you feel seriously deficient in "culture" because of your "areas" of ignorance?

Do you now regard it as better that, apart from anticipated vocational needs, each high-school pupil should have eight weeks in each of the ten sciences mentioned, or forty weeks in each of two?

8. If we define the controlling purpose of "liberal education" to be the educating of men to be "high-grade" utilizers,—in eating, reading, dwelling, recreating, enjoying music, appreciating the universe in which we live, employing the services of others, and enjoying fellowship with other men and God,—what are specific units of knowledge, revelation, ideal, or technique that can advantageously be derived by adolescents from each of the above sciences?

9. In elementary-school study of sciences, what importance should be attached to grasp of "general principles"? What general principles do you now know in fields of chemistry, biology, astronomy? What importance should attach to attainment of "scientific method"? What are your own attainments—particular or general—here?

10. What are some phases of the content of chemistry that can advantageously be taught in the first five grades; in grades 6 and 7; in grades 8 and 9; in grades 11 and 12?

What reasons can you give as to why this chemistry should be taught, rather than equivalent amounts of biology or astronomy or geology?

11. What are the chief vocations in the practice or study of which substantial amounts of chemical knowledge or of technique of chemical manipulation can be advantageously employed? Do these include: elementary-school teaching, house carpentry, electrical engineering, pharmacy, home-making, department-store salesmanship, navigation?

12. What phases of chemistry are advantageous to the person of moderate culture to-day who is using a large amount of effort to conserve and improve

his health? Illustrate by reference to nutrition, rest, ventilation, vocation, care of body.

What phases of chemistry can advantageously be employed by the average citizen who would become fairly proficient as a buyer of such utilities as: textile fabrics; preserved foods; house furnishings; household utensils?

What phases of chemistry can advantageously be known by the citizen who would effectively participate as voter in the direction of public sanitation—disposal of waste, maintenance of medical inspection of schools, water supply, development of housing legislation, supervision of markets, eradication of insect pests?

13. What phases of chemistry would now be regarded primarily as contributions to the satisfaction of cultural interests, with little or no reference to practical application? Here consider: chemistry of explosives, and of dyestuffs; recent changes in the atomic theory; recently revealed twilight zones between chemistry and physics; spectroscopic chemistry; recently developed phases of large-scale industrial chemistry.

14. Would it seem desirable and practicable in large high schools to provide two very distinctive types of courses in chemistry—(*a*) appreciational courses designed primarily to impart apprehensions in wide areas; and (*b*) pre-vocational or pre-technical courses for those designing later to enter chemistry-using vocations or to prosecute higher studies in this field?

Could similar appreciational courses be developed in physics, bacteriology, geology, and botany?

15. Assume the case of a large number of girls in high school who intend sooner or later to study home economics toward very practical ends, but will take up no other studies or vocations which require any chemical knowledge. Suggest the scope and characteristics of a pre-technical course in chemistry adapted primarily to these girls.

Assume the case of a substantial number of boys in the third year of high school who plan to enter engineering colleges. Suggest the scope and character of a pre-technical course in chemistry of four hundred hours (to include school and outside study) for these boys.

16. Is there any pre-technical chemistry that can advantageously be offered to persons planning later: (*a*) to study in ordinary secondary schools of farming; (*b*) to follow the vocation of machinist; (*c*) to undertake coal mining? Why do you think as you do?

17. What phases of chemistry can properly be included in the first-year high-school course of general science?

PHYSICAL SCIENCES

The physical sciences, for purposes of this discussion, will be taken to include physics, chemistry, physiography, geology, astronomy, meteor-

ology, mineralogy, and their related sciences or subdivisions, as these enable us to interpret, and in a measure control, the material universe in which we live—in its non-biological aspects.

Why should the physical sciences be taught in schools? What educational values are to be sought in them? How much of any one, if any at all, is essential to the realization of these values? To what kinds or classes of pupils is it most important that they be taught? How can it be established that for these pupils the values of other subjects which must be crowded out are not superior to the values of these sciences? Where and when shall these sciences be taught? Which, and how much of each? By what means and methods?

Adequate sociological and other data necessary to answer these questions is not now available. Some of the issues and problems involved admit, however, of considerable analysis in the light of experience. Numberless attempts have been made during the last few centuries to teach the physical sciences in schools. Many of these have succeeded in some measure.

The kinds of objectives that can be achieved through physical science teaching should at the outset be classified into the "projective" and the "developmental." It is clearly the expectation of those who control college admission requirements in physics and chemistry that these subjects shall be so taught in high school as to produce certain quantities of definite knowledge, and certain kinds of definite technique, which shall persist as foundations of subsequent study. It will not be disputed that any physical science, studied with a view to subsequent application of its principles or its methods in vocational activities, should be learned to very considerable degrees of exactness.

At the other extreme are the kinds of knowledge that many of us have acquired of Mars, the North Pole, the volcanos of Hawaii, the caves of Kentucky, the extraction of nitrogen from the air, and the processes of mountain building. Assuming that we have not had occasion to specialize in these fields, it is evident that our knowledge is superficial and inexact, but nevertheless massive and satisfying. We *appreciate* fairly well the essential factors involved, though we could not use our knowledge for any practical purpose. Possibly this appreciation differs from exact knowledge, as does a painting of a landscape from a photograph. The details are absent, but the mass effects may be even heightened thereby.

Little progress can be made in advancing the study of the physical sciences in our schools until we shall have achieved concrete and exten-

sively exemplified analysis of these different classes of objectives. Let us think of young people, of at least average native intelligence, passing through the twelve grades of our public schools. Is it desirable and practicable that they, or at least some of them, should have astronomy? Why? Certainly not to make astronomers, navigators, or meteorologists out of them. To make them *appreciative* of the universe in which we find ourselves, and of man's achievements to date in comprehending the distances and movements and composition of the universe? Probably, yes. But how much knowledge is "enough" here? Suppose an interested teacher were given twenty hours in each of the third, fifth, seventh, ninth, and eleventh grades in which to teach cultural astronomy—what would he do? With what degrees of exactness would he seek to have some things learned?

The objectives of chemistry and physics need similar classification. It is clearly possible, and probably desirable, to teach certain portions of these sciences to high-school pupils who expect later to study for the engineering and some other technical vocations in such a way that essential knowledge and method are acquired once for all. Probably the eleventh and twelfth grades are very suitable places for such pre-engineering physical science. In view of the exacting nature of these vocations, there are probably no good reasons why high-school studies offered as pre-vocational electives to them should not likewise be rigorously and exactingly taught.

But these methods will almost certainly defeat the cultural purposes of science study on the part of those who expect to make no vocational use of their attainments. Given sufficient resources, a large high school can certainly render an important educational service by offering in eleventh and twelfth grades genuinely cultural courses in physics and chemistry. These certainly should not make a fetish of exact knowledge, neither need they train the pupils long and patiently in quantitative determinations. Cultural ends are best served by developing and extending appreciations, broad interpretations and insights, persisting interests.

Other needs can be brought into relief through case-group analyses. In a high school having a regular attendance of six hundred girls there are always present substantially one hundred to all of whom this description applies with substantial accuracy: they do not vary greatly from the average in intelligence; they will not go to college, and most of them, in fact, will not remain in high school to graduate; and they possess as yet only the "average" cultural and civic interests commonly found in their age, sex, and class. The controlling purpose of a sound high-

school education is for them, let us hope, to advance their cultural, civic, and health-controlling powers and appreciations, and, incidentally, to give them some pre-vocational training, if feasible and desirable.

How shall these general objectives be translated into specific objectives for physical science teaching? Let us assume that in eighth or ninth grades general science has been taught with some degree of success; and that a cultural course in biology has been offered in ninth or tenth grades.

In the tenth or eleventh grade could be offered two courses in physical science that would, if elected, have obvious values to these girls: (*a*) An appreciation course of one year, including materials from both physics and chemistry, and covering ground different from, or more advanced than, that taken in general science. (*b*) A pre-home-making course in applied physics and chemistry, centering in topics having relatively large pertinence to the home-making vocations. The latter course, probably, should not cover a very wide range—since it appears that only limited areas of physics and chemistry have any pertinence in home-making, though these are of relatively great importance.

Why should chemistry be taught at all in secondary school or college? Granted that we can provide a successful defense for the thesis that chemistry should be taught, there still remain two other obstinate questions to which contemporary pedagogy gives as yet no satisfactory answers. These are: To whom should it be taught? How much of it should be taught?

But back of these questions are the more fundamental ones: What do we mean by "chemistry" as a school or college subject? What are the "values" to be realized through study, enforced or permitted, of that subject? How do these values compare, in importance or urgency, with those that might be achieved by giving the time now assigned to chemistry to other studies?

As a school subject chemistry is fairly well standardized, of course, through college entrance requirements. But upon what foundations of demonstrated need, individual or social, do these now rest? No one can say with certainty. Like Topsy, the standards implicit (or explicit only in aspirational language) in these requirements have "jest growed." True, the alleged purpose is to teach the rudiments or elements—the elements, that is, of knowledge, as was once contended, or, in more modern ideal, of technique, process, or scientific method.

But there is, for up-to-date pedagogy, too much of pious faith about

this purpose of teaching the "elements" of any subject. We do not any longer attempt to teach the English language through alphabets and grammars. Too many introductory texts in chemistry seem still to present the subject as penmanship was presented in the days of "pot-hooks."

It is time to go to fundamentals in the search for criteria of educational values here. The entire field of organized chemical knowledge is now vast, but well defined. So are corresponding fields of knowledge in astronomy, bacteriology, philology, ethnology. Knowledge expands in geometrical progression; but individual human capacity remains much what it long has been, subject to some helps from teachers, books, and apparatus.

Assume that we could distinguish in the early stages of their secondary-school stage one hundred persons of whose subsequent careers the following facts would be substantially true: they will receive the equivalent of at least two years of liberal arts college education; they will be among the "upper" cultural classes throughout their adult life, being thus in a position to contribute to high-grade standards of utilization, public opinion, and the like; they will follow vocations in which chemistry plays no visible part—law, accounting, foreign-language teaching, dry goods, merchandise, etc.

All sorts of arguments could, obviously, be presented for giving to this case-group, as part of their liberal education, Latin, French, medieval history, classical English literature, economics, mathematics, physics, biology, astronomy, drawing, vocal music, and hygiene. They can not have everything—at least, in any considerable quantities. Should we include chemistry? Could we include some chemistry—not, perhaps, the staple four hundred hours (class and laboratory) of the secondary school, but a less amount, so presented as to give a persisting body of cultural appreciations?

Assume a second case-group of one hundred of whom it is reasonably certain that nearly all will enter vocations—farming, home-making, mining, engineering, pharmacy—in which, sooner or later, some exact knowledge, and some refined technique, of a chemical nature will be required. For these we could certainly recommend a course no less exacting than that now commonly outlined in college admission requirements. Might it not well be even more exacting and, especially, even more insistent on the study of practical applications?

The first type of course would be essentially cultural, the second prop-

erly pre-vocational. The first should culminate in varied appreciations, the second in definite powers of execution or performance. The first should certainly not involve as "hard" pedagogy as the second.

It is not assumed, of course, that any actual school would show in clearly differentiated form the two classes of learners referred to. But we know, in the light of subsequent events, that such classes nearly always exist in secondary schools. It may not always be clear to which class John Doe, aged fourteen, now belongs. But we can make no progress in education by considering at the outset individual cases only.

If the two classes referred to actually exist,—that is, if the two types of needs are found,—then the school should provide appropriate courses for each. Its later problem is to provide, by recommendation or prescription, for the best possible adaptation of individuals to the respective courses.

Our present courses in chemistry suffer from the evil of trying to serve two unlike purposes—the cultural (or appreciative) and the pre-vocational (or executive). Hence they are not quite fish, nor yet quite fowl.

Representatives of the chemical vocations necessarily think of introductory courses in pre-vocational terms, having in mind the exacting standards of later practical studies. But there is some chemical knowledge, insight, or even training, which should be the possession of all, irrespective of vocations to be followed. Students and practitioners of chemistry are bad guides for us here. When the exponents of genuinely liberal education shall have found sound pedagogical principles, they should be able to guide us.

A PROBLEM

High School M has a regular attendance of about 1200 students—500 in their first year, 350 in their second, 200 in their third, and 150 in their fourth. Of these last about 120 will graduate, and 90 will probably go to higher institutions. There is no commercial department, nor is home economics or manual training offered.

The local population is engaged largely in manufacturing enterprises, most of the families who send pupils to this high school having incomes of from eighteen hundred to twenty-five hundred dollars a year. Students desiring commercial work go to another high school, as do also boys attracted to manual training. This high school has always been a "gen-

eral" school, having college preparation as its chief specific purpose. It is well equipped with laboratories for physics and chemistry.

Investigation shows that fewer than one third of the students remain to graduate. Those who leave during the first two years enter upon commercial or factory work, there being no local vocational schools except that for typewriting and stenography.

Leaving one course each in chemistry and physics primarily for students wishing to enter college, describe the cultural, pre-vocational, or other objectives that would guide in proposing plans for one other course in each of these fields primarily for students who can not be expected to remain to graduate.

C. BIOLOGICAL SCIENCES

INTERPRETATIONS OF EXPERIENCE

1. What are some items of your knowledge in these fields that are of keen interest to you: the wild-animal life of Africa; the vegetation of the Amazon Valley; the antiquity of plant life on the globe; the evolution of animal species; the probable animal ancestry of man; the breathing processes of plants; essential facts as to the life processes of bacteria?

2. Given ample leisure time, in which, if any, of the following fields would you like to pursue further cultural studies: protective coloration of animals; desert biology; cultivation of rare varieties of flowers; exploration of deep-sea animal life; migrations of plant life; others?

3. What are some of the kinds of biological knowledge that have vocational significance to: the dairy farmer; the school nurse; the minister; the deep-sea fisherman; the orchardist; and the dietitian?

4. What kinds of "nature study," in your experience, proves most interesting and culturally profitable to children between six and ten years of age? Separately consider: bird life *vs.* magnetism and electricity; plant growing *vs.* manipulation of machines? Does it seem to you that readings about stars are preferred to readings about animals? Volcanos to deep-sea marine life?

5. What are some current lines of biological knowledge and hypothesis which you would consider it expedient to teach to high-school pupils? Why?

6. Is it your opinion that biological studies can be made effective approaches to these useful fields of appreciation and knowledge: the moral instincts of human beings; sex hygiene; sex morality; city sanitation; backwardness of tropical peoples; communicable diseases?

The educational values of the biological sciences, as these can be taught in schools, are manifestly of three kinds: (*a*) cultural, without reference to practical utility; (*b*) "self-service," toward care of health

and discharge of civic responsibilities; and (*c*) pre-vocational. In former years the first purpose largely controlled in botany and zoölogy as then taught. In recent years the second purpose seems actually to have been most functional, with a certain amount of rather vague and indeterminate reference to vocational outcomes.

Nearly all that has been said earlier of the physical sciences applies likewise to the biological. The latter have had somewhat the advantage of physics and chemistry in recent years in having had certain enthusiastic supporters and innovators among high-school teachers, and in having received somewhat less of desiccating attentions from college admission committees.

The cultural objectives of these sciences acquire peculiar importance in current thinking because of their intimate relation to the foundations of the social sciences. Perhaps in time the doctrine of evolution will have become a commonplace, as is now the Copernican system; but until then the cultural interests of many will be acutely intrigued by the "wonder-inspiring" possibilities of the former.

FOR SUPPLEMENTAL READINGS AND REPORTS

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CHAPTER XVIII

GEOGRAPHY

INTERPRETATIONS OF EXPERIENCE

GEOGRAPHY has long been one of the most important of elementary school subjects in American schools; but we give it much less attention in secondary and collegiate schools than do Europeans. Educators who become interested in geography sometimes grow extremely enthusiastic over the possibilities of that subject as a center for the correlation of natural science, history, and the social sciences. The rivalries of publishers have given us in recent years books of wonderful printing and replete with illustrations.

All readers of these pages have studied geography in schools; and they have all subsequently added much to their geographical knowledge by reading, travel, and conversation with travelers. How does your geographical knowledge now serve you? Are you conscious of serious shortages? Does it seem that you were taught much "useless" geography? What kinds? Test yourself by these questions:

1. What do you "know" now about Africa? Name one, three, ten of its rivers. Four principal cities of the South African Union. Three principal imports, and four principal exports, from that dominion. European ownership or control of the rest of Africa. What "appreciations" have you of: the wild-animal life of central Africa; the religious and social conditions of the natives of that region; what the English, French, and Belgians are doing there?

2. Is it important that adults of moderate cultural standards should know quite exactly certain geographical facts? Briefly define the character and extent of these in your estimation under the following heads:

a. River, city, and mountain-peak names and locations in South America; national areas, boundaries, and populations of South America; principal imports and exports of South American countries.

b. Essential facts regarding Paris, the Nile Valley, Rumania, the products of Syria, the social characteristics of the Indo-Chinese, governmental facts regarding India.

c. What essential facts should be known by these adults regarding: the sources of raw rubber; the principal book-publishing centers in the United States; the avenues by which raw cotton reaches centers of manufacturing;

the present sources of the world's supply of nitrates; international situations affecting China; the urban trend of populations throughout the world?

3. There are very substantial amounts of geographical material which in all grades pupils should be induced to apprehend—through general readings, visits to moving pictures, and other realistic means—toward the ends of "developmental" education, but without expectation that facts or principles thus apprehended shall remain available for conscious intellectual recovery—exact learning. Specify certain varieties of this material under these heads:

a. Books of travel in Africa, central Europe, China, the polar regions.

b. Moving pictures of the Alps, Indian jungles, Japanese cities, steel manufacture.

c. Narrative and descriptive children's books dealing with coffee production, Alaska gold mining, conservation of seals, rehabilitation of war-ravaged zones, Mohammedan ceremonies.

d. The printed and pictorial presentations of the *National Geographical Magazine.*

e. Graphically described processes of water erosion, ice movements, tidal oscillation, and cyclonic disturbances.

4. Are there fields of so-called vocational geography? Could these profitably be studied in junior or senior high schools? What are the vocations to which this knowledge is, or could be, pre-vocational?

Describe some kinds of vocational geography necessary in schools of: navigation; naval warfare; commerce; farming; graduate business administration; medicine.

Is it important that commercial geography be made a required subject in commercial high schools for girls preparing chiefly for stenography and salesmanship? In high schools of commerce for boys where many may become commercial travelers? What should be the content of commercial geography?

5. Can studies of geography be devised which will contribute, directly or indirectly, to the higher forms of civism? Analyze these under such heads as:

a. The development of constructive appreciations of the variegated backgrounds of our own social population—with a view to producing well socialized appreciations of geographic backgrounds in England, Italy, Russia, Japan, Ireland, Germany, American Indians, for negroes, etc.

b. Toward sympathetic comprehension of economic, cultural, racial, and other social characteristics of rival peoples—Japanese, Germans, Mexicans, etc.

c. Sympathetic comprehension of crucial problems in international relationships—migration of peoples, productive abilities, sanitation, territorial specialization and production, international exchanges, overpopulation, etc.

d. Sympathetic comprehension of crucial internal problems—racial or other caste segregations, conservation of natural resources, urbanization of populations, localization of production, public development of means of transportation.

6. What are the actual desirable objectives of cultural geography? How can these be compared to culture acquired from travel? Does this material belong mostly under the head of "developmental" or "projective" objectives?

7. Specify certain objectives toward which pupils should be trained in schools that should give adults, not quantities of mentally stored knowledge, but abilities quickly to gather and interpret knowledge from printed sources —the use of gazetteers, railroad timetables, contour maps, location of statistical repositories, interpretation of technical terms, etc.

8. Suggest a scheme by which, in a teachers' manual or guide to the teaching of geography in grades 4 to 10, the objectives could all be classified, first on an alpha-beta basis, second by the types of aims to be achieved (vocational, social, cultural), and third by the various topographic areas of the earth's surface. Suggest means by which a committee (a geographer, an intelligent business man, a cultivated home-maker, and a superintendent of schools) might organize and delimit the desirable projective objectives that should constitute minimum essentials in this field.

SCOPE OF REQUIRED GEOGRAPHY

No educator would seriously contend that we should dispense with geography as an elementary school subject. Nor would any well informed man object to the provision of rich elective courses in the several phases of geography in secondary school and college. But are we not considerably overdoing geography as a subject of compulsory instruction for all children in the first eight grades? And does it not seem probable that, through the very wealth of materials we now present, we are frustrating adequate assimilation?

The general subject of geography grows manifestly richer and more alluring. Exploration and research are opening up new territories year by year. Modern commerce makes accessible and significant regions that a few years ago even the well informed man thought of as far removed and negligible. Geology, meteorology, oceanography, biology, ethnology, and history are contributing new stores of interpretive materials. The war has created new political boundaries, revealed unsuspected interdependencies, and emphasized ethnic dissimilarities.

Those educators, from Parker to Huntington, who have specialized in geography seem naturally to become ardent partizans. Their followers rival each other in making full and attractive textbooks. Books of travel, photography, and picture projection reinforce their efforts. To geography much is given, and from it but little is taken away.

Surely we can not teach, or even thoroughly sample, all the "new

geography" in grades 4 to 8. It is sometimes forgotten that there are many other subjects to be taught here, not only to the children who will go on to higher schools, but even more to those whose abilities and opportunities deny them any considerable schooling of more than elementary grades. The various English-language studies, history, civics, literature, arithmetic, hygiene, practical arts, vocational guidance, current events, music, and fine arts, all have claims. Some years ago we began unloading "non-essential" arithmetic, spelling, and grammar from elementary school curricula. Recent textbooks in geography show some progress away from their former encyclopedic character and toward emphasis on more massive elements. Nevertheless they seem to reveal but slight progress as yet toward "minimum essentials."

The present writer is convinced that there is now acute need of a thoroughgoing discussion of certain problems of objectives in this field. For fifty years pedagogic discussion has centered far more around methods than around aims—except where these last have been developed by enthusiasts like Parker and Jackman, who would willingly expand geography to embrace half of all the offerings of the elementary-school curriculum.

SELECTION OF OBJECTIVES

The time is ripe to return to certain basic questions: *Why* should we teach geography—to all children under twelve, to all children from twelve to fifteen, to some young people from fifteen to twenty-two? What should we teach at these various levels? To what ends or purposes should we teach it—present impressionism and nurture of imagination, provision of definite knowledge for use throughout adult years, a wide range of social appreciations? How much time can we afford to give to geography, in view of all other objectives that must be met?

New textbooks in geography suggest to students of educational objectives these and several other queries. Why should so much attention be given to geography as an elementary-school subject? To what extent are geography specialists at variance as to the essentials of that subject for general or "common school' education? Is it a fact, as frequently alleged, that the men and women who are the products of our schools are still very confused in their knowledge of geography? Does it not seem probable that geography is now, like the arithmetic of some decades ago, a very much "overloaded" subject?

It is sometimes forgotten that textbooks and outlined courses in this

as in other subjects are taken very seriously by heavily burdened teachers of average ability and little inventiveness. Teachers of exceptional ability and opportunity—including a large proportion of departmental specialists—can make themselves largely independent of the specifications of textbooks—and in geography to a peculiar extent they actually do so. But it is probable that a large proportion of teachers in grades 5 to 8 are more than ever bewildered by the wealth of materials on the one hand, and the vagueness of the objectives suggested on the other, in the books now at their disposal.

It is useless to say that they would not have these troubles if they were "properly" prepared. Books and course outlines are tools, not for idealized workers, but for the human agents—pupils and teachers—as now prevailingly found. These people, working busily against time, are entitled to the best help that leaders can give. The present writer is convinced that they are entitled to more adequate and explicit information than we now give them as to certain kinds of "minimum essentials." Certainly some kinds of geographical knowledge or technique are more valuable than others? But existing textbooks introduce but few suggestions of shading or emphasis into the prodigality of materials they present. Is there any other subject in which just now the question of "what knowledge is most worth while" more urgently demands thoroughgoing study?

THE NEEDS OF CERTAIN PUPILS

In order to bring into focus certain factors in our problems, let us consider the needs of a "case-group." Entering the seventh grade of almost any large urban school are considerable numbers of boys of whom it can safely be prophesied that they will not enter, much less complete, a four years' high-school course. These are boys of less than average intelligence on the one hand, and of somewhat adverse social environment on the other. The vocational, cultural, and civic futures of these boys can now be predicted with substantial accuracy.

For the sake of definitive analysis of educational aims, and ignoring for the present the administrative difficulties involved, we can assume ourselves preparing a course of study in geography for these pupils. They have had some geography in the earlier grades, but in the seventh and eighth grades it will be urged that "advanced" geography be studied. Many other subjects will inevitably compete for place and time in the curriculum for these pupils—arithmetic, American history, civics, the

various English-language branches, hygiene, drawing, some form of industrial arts, vocational guidance, music, current events, and English literature, at least.

It will doubtless readily be agreed by all educators:

a. That for these pupils geography is one of the half-dozen most important subjects in elementary education.

b. That, as expected outcomes of such study, men and women of elementary-school education should possess some exact knowledge of geographical facts, and some useful techniques of finding and interpreting new knowledge when needed.

c. That there is a great wealth of geographical material—accounts of travel, vivid descriptions of distant places and peoples, pictures, commercial wares, and the like—which can advantageously be presented in these grades as intellectual and social "nurture," but of which no exhaustive study—memorization, review, problem solving, or analysis—should be required.

How much geography is enough? Obviously, the most difficult problems of objectives here are *quantitative*. Every educated adult should be expected to know some salient facts about two or four cities in France; but should any one be expected to know similar facts about thirty cities in that country? Every educated American will be expected to know the capital of his country; should he be expected to know the capitals of all the states? There are several scores of named rivers in South America—how many should each of us be able to name and locate?

Similar problems appear in connection with interpretations of physical geography. Geologists and physiographists have deduced many interesting explanations as to why there are so many lakes in Minnesota and so few in Texas, as to how the deep soil of China was formed, and as to why the Alaskan southern coast climate is so warm and moist. To the man with special interests in these things their number is legion and their lure almost without limit. But do not most of these belong in the fields of special cultural education, along with advanced studies of the wealth of literature, history, general science, music, and art, to be elected by learners devoted to that particular cultural, or sometimes vocational, pursuit?

Geographical knowledge of some kinds and degrees should be so definitely learned as to remain largely "functional" into adult years in the case of persons of modal intelligence, cultural interests, and social outlook. What is such essential knowledge of South America? Ocean currents? The social qualities of the peoples of India? Distributions of

rainfall? Sources of coffee and rubber? Distributions of various mineral resources? Ethnic divisions in central Europe? Chief products of Texas?

The textbooks in geography now widely used seem to give the busy teacher little help in determining relative values within this subject. Thousands of questions are often asked, these often to be answered by pupils with maps open before them. But what is expected of abiding and fairly exact knowledge? Does not class-room work of this kind promote superficiality, unless teachers—the rank and file, of course, since the gifted ones will make their own methods—are quite specifically informed as to the areas where superficiality and impressionism are "good enough"?

PROBLEMS OF OBJECTIVES

The questions raised at the outset can be further analyzed into problems which, it is submitted, deserve careful study in the near future. For example:

1. Are there essentially different *kinds* of intellectual products that should be sought through the study of geography?

2. What should we expect as tangible outcomes, along each of these lines, in the case of men and women from twenty-five to fifty years of age, who are: (*a*) of substantially less than average intelligence, but with schooling of at least six grades; (*b*) of the 50 per cent. nearest modal intelligence; and (*c*) of superior intelligence?

First, it is to be noted that there are several *kinds* of geographical knowledge and technique that must be considered in determining the values of and within that subject. Study of the interests and attainments of moderately well educated men around us will show that these kinds are to be included:

a. Fairly definite knowledge of certain salient geographical facts—the approximate location of Paris, the two principal rivers of China, the commercial importance of Buenos Ayres, the political control of Java, etc.

b. Appreciations, or generalized knowledge warmed by sentiment, of a considerable range of geographical phenomena and conditions—the crowded populations of the monsoon-swept regions, the extent of the Mississippi Valley, the industrial condition of western Europe, the wild game conditions of south-central Africa, and the like.

c. Social appreciations that are taught in the expectation of producing civic and other social understandings of remote peoples—admiration, comprehension, sympathy, and the like—which will later be functional in

affecting political, cultural, and other *international relationships.* (The moving pictures are now running a series under the title "America Face-to-Face with Japan," designed, in part, to extend understanding, and in part to evoke specific feelings with regard to that people.)

d. **Certain technical powers** of interpreting maps, searching for needed information in gazetteers and other works of reference, and of interpreting geographical statistics in tabular or graphic form.

e. **Some abiding cultural interests** in distant regions or peoples, shown in persistent reading of books of travel, patronage of select exhibits of pictures and wares, club contacts with travelers, and the like.

Second, though we have virtually no such standards at present, it is unlikely that desirable and practicable objectives for school geography can be formulated until we shall have agreed upon certain outcomes or results in adult life that characterize the man fairly well educated according to his potentialities. Every well informed man, in relation to his potential powers, should have some exact knowledge of certain geographical facts—what and how many? He should have certain generous appreciations and interests—what kinds and how many? He should have some conscious powers of interpreting geographical problems—why cities have grown on certain sites, why storms migrate from west to east, why trade "follows the flag"—how many, what, and especially why?

PROPOSED READJUSTMENTS

It may be doubted whether geography enthusiasts can be induced to see their subject in its due relation to all the other subjects of school education. In fact, we should not look to partizans of any subject for wisdom as to relative educational values. Problems of the relative values of geography and other subjects will become acute in proportion as the junior high school type of organization supersedes the upper grades of the eight-grade elementary school. The junior high school will bring departmental teaching and subject-matter specialists as teachers. It will force distinctions between required and optional courses. Its coming will undoubtedly force more careful consideration of relative educational values than has heretofore been given.

The general subject of geography in elementary and secondary schools should, it is submitted, be thus organized:

a. Further extension of present tendencies toward producing rich and varied "developmental" materials in the first four grades.

b. Differentiation in grades 5 to 7 of two very different kinds of

geography: (1) Minimum essentials consisting of those portions of the entire field of geographical knowledge as to which fairly exact mastery in adult life should be retained. (2) Further developmental geography, appealing largely to contemporary interests, and having little bearing on specific knowledge or powers to be possessed in the future.

To this end it would seem to be necessary, first, that formulations be made of those objectives that are essentially *projective*,—that is, where outcomes in adult life are to consist of fairly exact knowledge, appreciations, and technical powers have some form of ascertainable utility,—cultural, civic, or vocational. These can be regarded as the essentials of "hard" geography. Problems of the best *methods* to be adapted to the realization of these essential objectives require separate consideration. Doubtless many educators dread the effect upon teachers of this segregation of a relatively small number of fairly concrete objectives, since it is so easy for teachers to strive for quite "formal" mastery of these. Nevertheless it is in this direction that progress must be made toward minimum essentials.

Second, it is desirable to bring into some kind of pedagogic order the immense wealth of "developmental" materials now available—supplemental geographic readers, books of travel, geographic magazines, photographs, moving pictures, and the like. Perhaps these can be assembled and organized, but certainly they can never again be brought within the covers of one textbook.

SUPPLEMENTAL PROBLEMS

Geography becomes, under some conditions, a vocational study. What are these conditions?

Obviously, schools of navigation must make extensive use of at least certain portions of geography as commonly organized, and in highly specialized forms. It has frequently been suggested that the detailed memorization of capes and other contours where land and water join, so fully insisted on in earlier nineteenth-century textbooks, represented a survival of the "navigational" geography that must have been widely read and studied in New England during the first sixty years of that century.

Meteorology is sometimes considered a branch of geography. That subject, as well as some selected portions of physiography,—local phenomena of erosion, sub-surface water movements, and the like,—might very properly be required as "related sciences" in vocational schools of farming. Possibly prospective farmers—not the students who attend

agricultural colleges, most of whom will become agricultural specialists rather than "dirt farmers"—might also in their vocational schools study certain selected phases of *economic geography* with a view to better appreciation of possible coöperative integration of their production with similar kinds in other regions, as well as some of the problems of distribution of such products.

Objectives of geography in social education, as elective in secondary schools, may be few but very important, for specific purposes yet to be defined. (*a*) For purposes of liberalizing and rendering socially constructive appreciations of our own variegated racial membership, the social geographic backgrounds of England, Italy, Russia, Japan, Ireland, Germany, American Indians, negroes, etc., can be studied to advantage. (*b*) Toward promotion of international harmonies, appreciation studies of economic, governmental, and cultural qualities of rivaling and other peoples are readily practicable. (*c*) Certain larger international problems of citizenship—territorial specialization of production, migration of peoples, tariffs, international payments in gold, acculturation, sanitation, etc.—require background or basic knowledge that is essentially geographic. (*d*) Similarly, certain large problems of national and state citizenship—localization of production, urbanization of populations, development of means of transportation, racial or case segregation, conservation of natural resources, large-scale sanitation, etc.—have their strongly geographic aspects, which in some cases might be reached through studies of civic problems in other cases prepared for by topical selection and emphasis (if purposive) in geography courses.

FOR SUPPLEMENTAL READINGS AND REPORTS

BRANOM, M. E. and F. K. *The Teaching of Geography* (Ch. 1-4, The Practical Nature of Geography and Its Relation to Other Subjects; Ch. 5, Aims or Purposes in Teaching Geography).

BRIGHAM, A. P. *Geographic Influences in American History.*

BRIGHAM and MCFARLANE. *Essentials of Geography: A Manual for Teachers.*

DODGE and KIRCHWEY. *The Teaching of Geography* (Ch. 1, The Scope and Purpose of Geography Teaching).

GALPIN, C. J. *Rural Life* (Ch. 1, Physical Influences; Ch. 2, Psychology of Farm Life).

HALL, G. S. *Educational Problems* (Ch. 21, School Geography).

McMURRY, C. G. *Special Method in Geography* (Ch. 1, The Aim and General Character of Geography).

REDWAY, J. W. *The New Basis of Geography* (Ch. 12).

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CHAPTER XIX

CIVIC EDUCATION AND THE HISTORY STUDIES

A. CIVIC EDUCATION IN GENERAL

INTERPRETATIONS OF EXPERIENCE

CIVIC Education, defined as that division of social education which is designed primarily to promote effective "large-group" social relationships, must be greatly extended, developed, and improved during the next few years, if current aspirations and needs for better government, better economic coöperations, and better international relationships are to be realized. Little dissent to that thesis will now be found anywhere among well informed and generously disposed men.

In spite of the fact that some forms of conscious civic education are centuries, if not thousands of years, old, we to-day know very little regarding the specific objectives, the means, or the methods of civic education as that must be adapted to the needs of a democracy and to the requirements of truth-telling and general fair dealing among men living much in large groups which permit few personal relationships. Historic forms of civic education have commonly been guided by opportunistic interpretations of the principle, "The end justifies the means." They have been used to sustain dynasties, to minister to narrow nationalisms, and to carry parties into power. "Patriotism is the last refuge of the scoundrel." "Liberty, what crimes are committed in thy name." "My country, right or wrong." These are echoes from narrow civism.

We may not criticize too severely these past practices. A king or party or militant nation may often have been and done wrong; but at least they gave points of crystallization for "large-group" sentiments, ideals, programs. But, in the fuller light of to-day, we can declare those attitudes and means insufficient for our purposes. We may no longer wrest history away from the truth for the sake of patriotic propaganda. We ought not to nurture in children fear and hatred of neighbors for the sake of more compact herd coöperation.

All societies of which we have historic records have had government and politics. The men who first settled America brought with them many well defined ideas and sentiments regarding charters and laws, public meetings and suffrage, kings and governors, free citizens and bondsmen. On these foundations they and their successors built the political systems of the United States. Far-reaching ideals—of various kinds of liberty, of a democratic citizenship, of close control of governors by the electorate—have played large parts in the construction of these systems;

and so have practical necessities—of accepting expert advice in all departments of government, of restraining liberties in times of necessity, and of giving large powers, however unwillingly, to the man who, as natural aristocrat, boss, or politician, gives ability and industry to the study and pursuit of politics.

Most of us, born and reared in this political system, take it for granted much as we take air and the seasons, and the topography of our home region, for granted. We acquire understanding of it, and we accept our responsibilities for it, piecemeal, and often with little curiosity or understanding. The social psychologist might well wonder that, blundering along thus, the American people has succeeded at all in state-building.

1. From the standpoint of good civic membership in city, state, and nation, what do you regard as your greatest civic merits? Your most serious civic "shortages"? In what respects do you expect to be a better citizen, politically, ten years hence?

2. If you had opportunity to give one year to a careful study of economics, in what ways is it probable that you would be a better citizen because of that? In what ways does it appear that further study of the history of our nation during the years 1763 to 1865 would make you able to perform your civic duties more effectively?

3. Review and analyze some of your "civic participations" during recent years. Begin with your "conformities," that is, your own submissions to law and order. Have you had occasion to try to induce or force others so to submit to laws? What positive contributions have you made to public opinion? If you have voted, analyze some of the "public ends" that such voting was designed to serve?

4. What acute current problems of government are essentially economic? Separately consider: tariffs and protection; farm loans and other governmental aid demanded by farmers; governmental regulations of railway rates; effects of different methods of taxation; governmental intervention in contests of "labor and capital."

5. Trace to their foundations in social and other sciences problems of public policy involving detention, care, education, and other treatment of adult criminals; juvenile criminals; mental defectives; widows and dependents; vagrants and unemployables; the crippled; the blind; and the deaf.

CIVIC EDUCATION IN SCHOOLS

The means of civic education in schools may for the present be considered under two heads—the indirect, and the direct. Under the former should be included reading (literary), history, geography, and school government. Under the second we include civil government, community

civics, economics, sociology, social problems, service projects, and dramatic projects.

Civic education, it must be recalled, resembles physical education, and training in oral English, in that a large part of it is inevitably accomplished outside of schools. The functions of the schools are, therefore, residual, that is, the schools—from kindergarten to college—must discover the defects or shortages of extra-school education and atone or compensate for these. This may mean teaching some things that can not effectively be acquired outside. It may mean, as in the case of English pronunciation, correcting bad habits formed elsewhere. It may mean giving ideals as counterpart to what the world gives in experience.

THE MEANS OF CIVIC EDUCATION

Where specific forms of civic education have been employed for some years, evaluation of their results is very much needed. Where they are of only recent development, further experimentation in adapting them to various grades and to different classes of learners is essential. Current problems are suggested by these questions:

1. What "transfers" of the civic attitudes, ideals, and insights appropriate to "large-group" membership derive from effective "small-group" education?
2. What contributions to right civic behavior in adult life can be derived from various forms of school discipline?
3. What results probably accrue from training in literacy, and can these be improved materially in our more progressive states?
4. What valuable contributions toward education for civic participation possibly come from present courses in history; and how can these be improved?
5. Does geography as now taught make substantial contributions to civic appreciation, insight, or ideal?
6. What valuable results are, or can be, derived from the study of (neighborhood) community civics, and where should this subject be taught?
7. Can we and should we teach "economics" in elementary or high schools?
8. Can we and should we try to teach some form of "sociology" in these schools?
9. Can "service projects" be extensively developed as means of civic education?
10. Can "exploratory projects" be made serviceable?
11. What are the possibilities of "dramatic" projects?
12. What are the contributions of such semi-school forms of education as scouting, summer camps, and clubs?

FOUNDATIONS IN MORAL EDUCATION

Moral education, defined as including primarily those forms of social education which are designed to promote right small-group relationships, is only in a small measure a practicable function of day schools. The major factors in all small-group relationships, except those essential to the proper functioning of school groups, must be produced in the family, the church, the neighborhood, and under other conditions where face-to-face coöperations are initiated and must be developed.

The functions of schools in moral education are, therefore, residual in the main. They are still greatly in need of analytical study and evaluation. In a measure, they resemble the functions of the school in physical education. In both the school is in a poor position to *train*—towards moral or health practice; but it may prove able to do much by giving moral *enlightenment* or *insight;* and it may recover again some of the importance it once had in days when authoritarian controls were effective—by becoming a source of "spreading" moral aspirations and ideals. But the school will have to learn to produce and expand moral ideals in accordance with the conditions—and, for purposes here under discussion, the limitations as well—of democracy and free thinking. Unless some great reversal of social evolution should take place, we shall not revive the authoritarian controls under which the pre-scientific social order was founded and erected.

Certain essential foundations of civic education are without question found in the results of moral education, but the social psychology of these is yet obscure. Our thinking is baffled here, in large part, by the general use of abstract terms from the vernacular—the very vagueness of which often seems welcome to the "aspirationalists" who now take so prominent a part in the discussion of moral and civic education. As shown elsewhere, such words as "loyalty," "patriotism," "Americanism," "probity," "altruism," "tolerance," "democracy," "Christianity," "freedom," and scores of others are essentially balloons that can be filled by almost any kind of "hot air" at the will of the user. As commonly used in propagandistic writing (often seeking realization of Utopian objectives), they are as sadly in need of deflation as Bolshevik currency.

In our present ignorance of the interconnections between moral and civic education, the only safe course is to lend all the encouragement we can to sound moral education, whilst at the same time reserving time and means to produce those civic virtues that are not only tangibly essen-

tial to "large-group" harmony, but are in varying degree antagonistic to the intenser "small-group" interests as ordinarily felt and even sometimes approved.

School discipline and order call chiefly for moral rather than civic qualities, but the *public* functions and character of the school gives this institution far more incentive and opportunity to *idealize* and *generalize* moral virtues toward their cognate civic virtues than are practicable to household, church, neighborhood, and vocational groups.

It is needless to examine here the sociological significance of the oligarchic controls that formerly prevailed in schools; how these have generally given way to benevolent paternalisms; and how, at present, educators (a few, at least) are bent on discovering ways of making school coöperations and other interdependencies *democratic* in outlook and operation. Probably there are many aspirationists who greatly exaggerate the practicability of making school coöperations large and important *means* of civic education; but none can deny that there are considerable possibilities in that direction.

General literacy represents, so far, the greatest single school achievement toward civic competency. In many states, barring a few immigrants and extreme subnormals, we have attained that goal which rightly seemed so important to the founders of many, at least, of our commonwealths. It is probable that educators and social economists, in their keen perception of civic shortages still to be overcome, and in their eagerness to press on to new goals, tend to undervalue the civic importance of universal literacy. But it must be ranked with sound family and neighborhood morality as among the indispensable foundations of the later and more specialized civic virtues.

It remains completely to universalize literacy—and, in this country, to make it literacy in English for all but persons very well educated in other languages. Two other improvements are practicable—to establish reading powers with still less effort than is now required, especially for silent reading; and so to produce powers of literacy as to integrate with them interests in reading content. But all progressive teachers are now well on the road to these goals.

B. CIVIC EDUCATION BY MEANS OF HISTORY AND GEOGRAPHY

INTERPRETATIONS OF EXPERIENCE

1. In what fields of history reading or study are you so interested that if you had free time you would gladly give considerable of it to study in these

fields? Do you feel that you could do this alone, or would you need instruction? Are your interests essentially "cultural," or do they have some practical objectives? What are the latter?

2. In which of the following fields of history do you feel that you are "reasonably" well informed, and how have you become so: the American Civil War; the two presidential terms of Woodrow Wilson; the Age of Pericles in Athens; the entire history of Brazil; the history of the settlement and upbuilding of your own state; the life and work of Gladstone?

3. What kinds of contributions to knowledge or appreciation of historical events or personages seem to you easily to be derived from such fiction as: Cooper's *Last of the Mohicans;* Churchill's *The Crossing;* Sienkiewicz's *Quo Vadis;* Lytton's *Last Days of Pompeii;* Dickens' *Tale of Two Cities;* Wharton's *Age of Innocence?* Do such fictional materials seem to help toward: (*a*) the kinds of historical appreciations and insight that make for better citizenship; (*b*) cultural appreciations of value, even if the historical suggestions are largely unreal?

4. Give ten dates, ten names of personages, five significant legislative events, five "population movement" events, and five inventions or discoveries within the United States between 1800 and 1900 that "every moderately well educated American should know"—that is, in connection with each of which he should have in memory some exact facts, some vivid associations, some fairly adequate valuations.

5. Which of your most definitely matured "civic understandings" seem to have been considerably affected by your studies of (*a*) history, or (*b*) geography? Your civic aspirations? Your civic ideals? Your civic attitudes—that is, deeply rooted convictions, beliefs, prejudices?

HISTORY AS A SOCIAL SCIENCE

Any general or special science that deals primarily with men in their social relationships will here be called a "social science." Sociology is the most general of these, standing toward economics, ethnology, and politics very much as biology stands toward bacteriology, parasitology, physiology, and botany. Economics is a social science centering in man's relationships to wealth or life-supporting services and commodities. Civics deals primarily with men's interdependencies in social control, and especially through government. Education, penology, ethnology, anthropology, eugenics, theology, and others are, obviously, ancillary social sciences.

History is commonly a social science in so far as it records, describes, and interprets social relationships. Paleontology includes large amounts of one kind of history, but not social history. Histories of dynasties,

nations, migrations, races, and religions are social histories. But history is primarily descriptive of "unique events," whilst the other social sciences aim at discovery and interpretation of general principles or laws.[1]

Both history and geography can be made to serve dual rôles in school education. They can be used for general culture, or purposively toward certain forms of civic education. But it is doubtful whether any particular portions of either subject can profitably be made to serve both ends simultaneously and to good effect. This statement is made here with full appreciation of the fact that few educators would as yet admit its validity. Nevertheless, in testing it, they are recommended to define certain fairly specific objectives of civic education or of personal culture; then to select from history or geography such means as can be found best to contribute to the realization of these respective objectives; and finally to discover the effects of proper methods of teaching on the two different kinds of aims.

The study of history especially ministers to these two somewhat dissimilar ends in education. Some history should certainly be studied primarily for culture—for the vision, interests, and appreciations that are worth while in themselves, or are essential means of further culture. Other kinds of history should be studied because they minister to the insights, appreciations, attitudes, ideals, and aspirations that make us good members of our social order—good citizens in a somewhat delimited sense of that much-abused word.

The first kind of history—as a basis for culture—is the kind that most interests H. G. Wells. His *Outline* is a "survey" of the world, including its prehistoric reaches as far as evidence is available. While some portions of such history are essential as constituting a sort of vertebral column for the "social history" needed in the civic education of the typical citizen, we should not allow Wells' enthusiasm to delude us into thinking that more than a small proportion of the topics or materials of his *Outline* are essential to that end. The leaders, the pace-setters, the chosen opinion-givers of our citizenry, can well use the more abundant materials, of course. But educators and textbook makers tend incessantly to overvalue chronological and remote history for the learner of average abilities and opportunities.

History study of certain kinds has for ages been a potent agency in civic education. It has been the most powerful means of teaching love of country and contempt or hatred of alien nations. "The teaching of

[1] See Giddings, *Studies in the Theory of Human Society*, Ch. V., for an especially suggestive analysis of the relations of history to the other social sciences.

history is responsible for the prevailing strong enmity between nations and races. In England (or America or Germany or Japan, too, of course) the history lesson commences with England, and they teach children that England is the best country in everything in the world, causing pupils to think others are their inferiors" (H. G. Wells).

History study, as ordinarily conducted,—let us say in such countries as Germany and Japan,—does much to "set" feelings, sentiments, and appreciations. Especially does the uncritical mind of average caliber thus acquire valuations that are apt to endure for life. Modern historians have in large measure accepted the responsibilities and attitude of true scientists in writing history; but it can not be said that in the pre-collegiate schools such attitudes control as yet in the teaching of the subject—nor, be it submitted, is it yet certain that practically they can or should.

The history of every known kind of human—and even non-human—activity or evolution can, theoretically, be formulated and documented. Thus we often speak of the history of: the United States; New York City; the New York Central railway station; the Astor family; the Poles in America; European civilization; the Crusades; medicine; iron and steel working; Mediterranean commerce; the French language. It would not be incorrect similarly to speak of the history of the Mississippi River, of Vesuvius, of the American bison, or of the Shakespearean folios. Men write histories of literature, of Gothic architecture, of the steam engine, and of Wagnerian music.

The first test of the scientific character of any history is, obviously, its faithful report of particular details and events. An acceptable history of the life of Robert E. Lee or of the building of Brooklyn Bridge, or of the Arabs of the tenth century must give names, dates, and other records of facts in correspondence with "the truth." The basic affliction of history as record and report is invention or misreporting of its items. In this respect history can be compared to bookkeeping. The first essential is record of items, transactions, data—without organization and without interpretation, if need be. Given intelligible record of items in either history or accounting, subsequent readers can organize and interpret such data so as to reach conclusions as needed by them. But if the original entries are forged or distorted the situation becomes fairly hopeless.

The second test, doubtless, of the scientific character of any history is to be found in its organization of data. Because so much of the events of history occurred in *time* sequences, we think of the chronological order as of first importance. Next is the territorial or regional organization, which often merges into a political group or nationalistic organization.

Again, useful purposes are often served by arranging the data of history in easily apprehended relations to some outstanding event or personality.

The third test of the scientific treatment of history is found in the sufficient and scientific interpretations of the relationships of the event to other prior, contemporary, and subsequent events. Here history clasps hands with the other social sciences. Since all the social sciences except history are of comparatively modern origin, it follows that the elder historians interpreted their historical materials as well as they could in the light of the then prevalent traditions and speculations—religious, political, and philosophical. Doubtless every historical thinker after 476 A.D. tried to find the *causes* of the dissolution of the Roman Empire. Some of the proximate causes lay visibly on the surface of things; but the causes of these causes have interested speculative thinkers to this day. Perhaps every social reformer, from the man inveighing against slavery, land tenantry, or childlessness, to anti-monarchist and anti-Christian, has used the "fall of Rome" as a signal instance of the effects of the ills they desired to cure.

The widespread appeal made by Wells' *Outline of Universal History* (1921) is probably due in large measure to the freshness, scope, and lucid presentation of his numerous interpretations of past events in terms of the interests and prevailing ideas of 1920. Few persons are deeply interested in the history of any remote period or event "for its own sake." But many are interested in any remote thing if it brings light and fuller understanding to contemporary interests.

This fact suggests at once that no historian can more than partially interpret his historical materials when he writes. The thinkers of each new generation bring new means of interpretation to the study of old problems. Now that we know the relation between certain mosquitoes and malaria, students are trying to ascertain the probability that at some early date these mosquitos were imported to the swamps around Rome and thus caused the malaria which devastated those regions. Freudian psychoanalysis suggests new interpretations of the careers of Julius Cæsar, St. Jerome, Dante, and Napoleon. A well known student of climatology thinks that the greatness of Mediterranean countries from 1500 B.C. to 500 A.D. was greatly due to favoring climates, which have since changed for the worse.[2] Now that a half-century or more of writing and study of economics and ethnology in the light of sociology gives us an extensive knowledge of social origins, social processes, and social struc-

[2] See E. Huntington, *World-Power and Evolution.*

tures, there develops a rapidly growing tendency to try to interpret much of history in terms of sociological principles and laws.

HISTORY AS A SCHOOL SUBJECT

History in the lower grades of schools is now usually taught by what are here called the methods of "developmental readings." But in upper grades and high schools little progress has yet been made away from the highly didactic methods long characteristic of the subject, except where an exceptionally resourceful teacher, having available a quantity of library, source, and other "laboratory" materials, is disposed and able to set students at the work of learning in ways resembling those employed by the original writers of history itself. For the majority of upper-grade pupils "learning" history means the memorizing of textual statement, and uncritical acceptance of textual data and generalizations.

The same method still prevails largely in the other social sciences. All the well known texts in civil government consist chiefly of condensed descriptions of the structures and functions of political or other large social mechanisms, supplemented by some formal exhortations to prospective citizens as to their obligations and opportunities through civic participation. These didactic texts vary considerably in the vividness and simplicity of their topics, in the extent to which they include or exclude topics relevant to every-day civic performance, and as respects concrete "setting" and "dressing." But even at their best they are not, and can not be, "readable" in the sense used when we speak of "readable" books of travel, biography, or fiction. They leave the student little to find out for himself; they set him no tasks except the dreary one of "comprehending" and "committing" formal and condensed statements of the text.

"Didactic methods" of presentation are, of course, of very great service to learning. Every cyclopedia, dictionary, atlas, scientific treatise, and historical work of reference is obviously made effective largely by the adequacy of the didactic form upon which its assemblage and organization of material is based. The ordinary textbooks in civil government or in American history used in our schools would be very serviceable as books of reference for learners seeking specific information to supply needs developed through other contacts.

The objectives of history study in schools are still obscure. Hence contemporary difficulties in determining the place, scope, and methods

of teaching the various divisions of the subject. Can history study be made to give important contributions to civic education? On the other hand, *how much* of cultural mastery is enough as a minimum, let us say for elementary-school pupils of less than average abilities? These problems can be given more comprehensive statement by analysis of a "case-group."

Let us take a case-group of boys found in the seventh grade of any large junior high school or elementary school. The case-group here considered consists of pupils who are below the median in intelligence, and they come from social environments of less than average cultural opportunities. Virtually none of these pupils will be found attending full-time schools after fifteen. Most of them, after a few years in juvenile employments, will be found in skilled or semi-skilled urban trades, factory callings, transportation work, dock work, and the like. All will be interested in politics, and nearly all will have families. Unless otherwise educated, a large proportion will, as adults, read freely of newspapers and cheap magazines, and will freely patronize the "movies." Few will read substantial books, but they will be ambitious for the better schooling of their children.

Assuming that we can count upon the attendance of these pupils only through seventh and eighth grades, what objectives in their study of history should we set up? Accept current standards of "good schools" in the first six grades—including fairly extensive amounts of "developmental" history stories and biographies and small amounts of well defined "fact" history.

Objectives in civic education primarily, rather than cultural education, will probably be demanded by most educators. By long custom, seventh- and eighth-grade history has largely centered in the intensive study of the history of our own country. Even more, it will seem, should that be the case with the boys now under consideration.

But in what ways, if at all, can American history be studied so as to increase or improve the attributes of good citizenship? For the present we have only beliefs here. It is evident that several kinds of quite distinct qualities can be expected—definite knowledge, ideals, and appreciations. Which of these are important, and what kinds and degrees of each? The problems of objectives that these questions suggest are numerous and difficult. Here only certain provisional findings can be indicated.[8]

[8] For more extensive discussion see Ch. X in D. Snedden, *Sociological Determination of Objectives in Education.*

PROVISIONAL FINDINGS

1. **Minimum essentials** of history should be taught in all grades, primarily for cultural purposes, but also as necessary scaffolding for civic education. These should be taught cumulatively, with every practicable graphic and other aiding device. There should be yearly review of essentials earlier learned, with yearly accessions. But the total time devoted to this subject should be small—perhaps not more than 3 to 5 per cent. of all school time in any one year. Some dates, some personages, some salient events, some generalizations, should enter into this "scaffolding" history—but never very much or many. Pedantic school men will always tend to ask too much. Most of the data of history we should leave where we now leave the materials that make up dictionaries, gazetteers, and encyclopedias—provided we teach our pupils how to find it.

2. Substantial amounts of history or allied materials should be offered as cultural education, on a flexible basis in the lower grades, and on an elective basis in the higher. No tangible contributions to civic efficiency should be expected from these sources, which should include hero tales, biographies, stories of interesting, even though very remote, events, historical fiction and poetry, moving pictures, and the like. Probably in grades 7 to 12 these should be offered as *short unit* courses, each centering in some attractive massive cultural objective.

3. Some history should be offered, possibly part of it required at least in grades 7 to 12, primarily because it will contribute to civic appreciations, powers, especially as these will be needed in the years ahead. Almost never, probably, should this be either comprehensive, or to any material extent chronological, history. Rather it should originate in a series of vital current situations or problems on which it is practicable and profitable to have the learner go back for relevant historical origins, settings, and perspectives. If he can grasp the essentials of the contemporary situation, he can interpret some, at least, of the reports of its corresponding and perhaps causative antecedent situations. Certainly, if he can not grasp present problems, he will find corresponding older ones hopelessly beyond any real comprehensions—which must be distinguished from the various "verbal" apprehensions with which history teachers must so often be content.

4. Some "stiff" courses toward projective objectives may well be offered as electives in high schools, as cultural studies for persons having tastes and abilities for such offerings.

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CHAPTER XX

CIVIC EDUCATION THROUGH THE SOCIAL SCIENCES AND OTHER MEANS

INTERPRETATIONS OF EXPERIENCE

CIVIL GOVERNMENT has been studied more or less irregularly in public schools for more than half a century. Since 1880 the social sciences have made remarkable progress in all American colleges. Sociology, the youngest of the inclusive sciences, is now being studied by scores of thousands of students in higher institutions. Attempts have been made to teach it, as well as economics and derivative "social problem" subjects in secondary schools.

1. In what ways, as far as you can see, have your studies of civil government and the other non-historical social sciences contributed to your present civic efficiency? Consider separately: your civic conformities; the ideals which animated you in war-time; your abilities to "vote right" on intricate public questions; the direction and force of your civic influence on others in election campaigns.

2. What are some of the "social problems" that now most vex American politics? Does it seem to you that the social sciences already contain the solutions of these problems?

3. Why does it seem important to you that prospective voters should know something of: the advantages to labor of the "closed shop"; the relations of city housing to rates of tuberculosis; the cost of keeping incarcerated criminals; American trade with South America?

4. What seem to you some of the respects in which the defects of municipal government are like malaria—preventable if citizens will only take action? In what respects are other municipal problems like influenza—unpreventable and incurable, because science does not yet know causes, methods of transmission, or cure?

5. There are many social problems that tend to become political problems —that is, as necessitating governmental action. What are your opinions on those given below, and how valid do you think these opinions to be, on such questions as:

a. The soundness of the policy of giving pensions out of public funds to widows with children?

b. The wisdom of having the Interstate Commerce Commission fix freight rates on railroads?

c. The desirability and feasibility of compulsory arbitration in case of disputes between labor unions and corporations?

d. The wisdom of providing colleges or universities in large cities?

e. The wisdom of permanently segregating women of very low mental powers?

CIVICS IN SCHOOLS[1]

Civics, the science of civil government, is like economics in the range of its facts and interpretations. Some of these can be taught to seven-year-olds, others are clearly beyond the grasp of high-school seniors. Educators have recently confused our terminologies here by popularizing the somewhat tautalogical term "community civics," under the mistaken assumption that the word *community* means local neighborhood, or primary community—a mistake also made by many contemporary writers on "community centers," "community festivals," and "community coöperation." The fact is, of course, that in any adequate meaning of the term the United States, California, or New York City are "communities" no less than are a village, a rural area of twenty families, or a city block—and sometimes considerably more so, when measured by the vital coöperations actually involved.

What shall be taught from civics in elementary and secondary schools? It seems generally agreed that we have overdone our teaching of *political anatomies*—the structures and functions of governmental mechanisms. The parallels to be drawn with physical education are obvious. Years ago, desiring so to educate children that, as men and women, they could and would conserve and promote their own physical well-being, educators devised for the schools courses in physiology and hygiene. But for years these gave too much physiology, and too little hygiene—too much didactic teaching of structures and functions of bones, muscles, nerves, and organs, and too little training in ideals, insights, and practices of hygiene. As in the teaching of grammar, it was, of course, urged that such technical knowledge was essential to right practice; but the absurdity of these contentions now becomes slowly manifest.

Occasionally in civic practice it becomes urgent that some part of

[1] For fuller analysis consult D. Snedden, *Civic Education; Its Sociological Foundations.* Also his *Sociological Determination of Objectives in Education* (Ch. II, The Objectives of Social Education).

governmental machinery be reconstructed. Sometimes, in order to solve a practical civic problem, it is important to understand the operation of political machinery. But in modern pedagogy we do not compel the average learner to "learn" the dictionary or encyclopedia against the day of possible needs of bits of information about them. Our contemporary textbooks in civics are probably overloaded with "anatomical" details, and they rely altogether too heavily on strictly "didactic" methods. Some of the most promising present projects which seem to have been included as a sort of hasty afterthought.

Probably some civics should be taught from grades 4 to 12—but in each grade as short unit courses, possibly incorporated into "social problems" or other courses. The essential substance of civics needs frequent review, though didactic presentations should be used sparingly.

Neighborhood community civics—that is, of all the social environment that is accessible to first-hand observation and comprehension by the learner—is now a well developed subject for the higher elementary-school grades. But does not much of it really belong in grades 4 to 6? Are not grades 7 and 8 ready for the more difficult "community civics" of state and nation, as some of the mechanisms and processes and many of the problems of these must be apprehended imaginatively and at long range? Most pupils must read about Albany and Washington and the governmental practices that are followed there; but they can visit the neighborhood police station or town hall and see government of some kinds in operation.

ECONOMICS IN SCHOOLS

It is well known that a large proportion of modern political problems are essentially economic. Parties divide about tariffs, public control of banking policies, the coinage of silver, municipal ownership of street-car systems, compulsory arbitration of wage rates, and the issuance of bonds for public improvements.

It is obvious that the rank and file of voters are very ignorant of the principles of economics. But so, apparently, are also the large majority of legislators, editors, and others who have enjoyed a college education. The mercantilist doctrines, to the correction of which Adam Smith devoted much of his writings, are still held in effect by a large proportion of voters and their leaders, who, in matters of foreign trade, would both have their cake and eat it, too.

Wars, even in recent years, doubtless spring from many sources; but probably the basic one is some form of real or imagined economic oppression.

If the people of the United States should ever break into warring factions, it will probably be the result of economic cleavages between labor and capital, soil producers and fabricators, city and country, East and West. The Civil War was consciously fought for a moral issue on the part of the North, and a strictly political issue on the part of the South; but economic factors played a large rôle among the deeper provocative causes.

Economics should, then, clearly be one of the studies in civic education. Where? Toward what specific ends? How much? By what methods? But what is scientific economics? Let us not be misled by the "perfectionists." Some scientific economics is simple enough to be taught to eight-year-olds; some of it is too abstruse for college undergraduates. As in every other science, the immature as well as the less able-minded must first be supplied with concrete data and aided in deducing simple relationships. In the geography of the intermediate grades we to-day teach, or simulate the teaching of, a host of important economic facts. Children from ten to twelve years of age can readily be helped to an understanding of many facts and principles regarding wages, trade, thrift, and economic utilization. The large laws they can, of course, no more grasp realistically than they can the sphericity of the earth or the causes of the tides; but they will readily accept them from authoritative sources, as they now accept the generalizations of bacteriologists and grammarians.

The conclusion is obvious. Economics, like mathematics, physics, or biology, is a vast reservoir from which may be drawn materials suited to all ages and varieties of intelligence. It is the business of a scientific pedagogy to find the materials adapted to any stage of learning ability and for known civic needs. We should no more teach *general* economics in elementary or secondary schools than we should teach "pure" mathematics or chemistry. Our concern here, on behalf of the multitude, is with applications—applications of demonstrated utility and "teachableness."

Probably we should avoid "didactic" methods at all pre-college stages—that is, methods of direct and formal statement of facts or settled findings, verbal memorization of dry generalizations, in a word, "formal inculcation." For some purposes "problems" of a very thought-provoking and "principle-building" character can certainly be worked out. Perhaps still greater opportunities exist for the development by some pedagogic genius of a "case method" adapted to various grades of learning ability. Prob-

ably a few "service projects" can be developed, as well as a few exploratory projects; but, in the main, these are to be taken as relishes rather than for civic calories.

CIVIC EDUCATION THROUGH PROJECTS, PROBLEMS, CASES, AND READINGS

Educators, in their preoccupations with customary school practices, need to guard constantly against overlooking significant results in extra-school education. Especially important is such watchfulness in those fields where the functions of the schools are essentially residual, which is still largely true in civic education. Good citizens—in the political sense—were made long before there were schools. Many of the best citizens in our midst to-day owe little of their distinctively civic qualities and powers to their school education, beyond their literacy and their perspectives in history and geography.

Can schools partially annex or otherwise utilize some of these extra-school procedures? Can schools infuse into them somewhat more of larger purposiveness or lend them support? Or can they bring down into school years for educative purposes "large-group" activities that normally find expression in adult years?

Toward these ends many experiments are now being studied. Scouting represents far more than an experiment. The project method in several forms is being tried. Civic self-education outside the school takes place largely through readings and discussions—and experience shows that these can be adapted to schools. The responsibilities of citizens commonly confront them immediately as cases and problems. Schools have only slightly experimented with problem and case methods yet, but these unquestionably hold large possibilities.

Civic projects in schools are of several kinds—service, dramatic, exploratory, and planning. It is not easy to find and to adapt genuine service projects, and apparently the difficulties increase directly as does density of population, since this municipalization entails specialization of employed service. In sparsely settled areas service projects in such public utilities as road repair, fire protection, school ground and schoolhouse repair or beautification, flood relief, policing, poor relief, and the like, are practicable. Local Boy Scouts organizations have discovered various convenient service projects.

Dramatization projects have long been used in lower grades in connection with commemoration festivals, pageants, and the like. In civics classes such public functions as elections, naturalization, jury trials, legis-

lative sessions, and installation of officials have often been dramatized. The "school city" and other mechanisms of "school self-government" are more often functional as dramatic than as service projects. The flag salute and other representations found in progressive schools for small children are essentially dramatic.

Exploratory projects have proved vital means toward certain forms of civic education of older pupils. Visits to courts, legislative halls, customhouses, warships, army posts, city laboratories, waterworks, hospitals, and other centers of public service are valuable where practicable. Similar visits to significant centers of larger private economic activities are hardly less important in giving realistic backgrounds of civic appreciation—mines, power plants, docks, freightyards, newspaper printing establishments, packing houses, department stores, and the like.

Planning and experimental projects have yielded few returns yet in civic education. Planning projects are of doubtful utility at best, and should be tolerated only where it is manifestly impracticable to carry plans into execution. True experimental projects may be suited, as yet, only to the sciences that are farther evolved than are the social sciences.

The project method has a place in civic education, but there is no certainty yet that it is a large place. It may be very important as a means of giving realistic appreciations. Some educators look to it as a promising source of civic ideals, but it is questionable whether these expectations can be realized except when a very superior teacher intermediates—and in that case good civic education is assured by any method. But here we must await further developments in social psychology.

The primary purpose of civic education toward the initiatory, as contrasted with the conformist, civic virtues consists in developing and training well disposed persons as utilizers—utilizers of civic services as given by representatives and employed specialists, and of civic policies as these derive from any source whatever.

In actual extra-school life such utilizers' education now proceeds constantly through diffusion of ideas, sentiments, and appreciations in gossip, debate, campaign speech making, press, magazine, and bulletin.

Schools find it difficult to organize these pervasive and fine means. The academic mind naturally wants its means nicely capsuled into readily portable textbooks, notwithstanding omnipresent evidence of the fact that "the letter killeth, but the spirit giveth life."

Didactic or formal academic methods have a place in civic education, but it is a secondary place, at least for learners under sixteen years of age—and perhaps for any but superior minds. We must find other than

didactic means of realizing the essentially projective objectives of right civic education, as well as in contributing to the abundant developmental objectives that are now easily visible.

The subject is too complex to admit of analysis here. But it is the writer's conviction that within a few years virtually all present means of civic education for ages twelve to eighteen will be superseded by methods in which the means of most importance can readily be grouped under three chief heads: (*a*) General readings; (*b*) Problems; and (*c*) Case problems.

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CHAPTER XXI

THE MENTAL SCIENCES

INTERPRETATIONS OF EXPERIENCE

THE general science of psychology is steadily developing a variety of special sciences, "pure" and applied. These promise to become of very great importance in bringing order and efficiency into the lives of men. As methods of teaching become science-based instead of customary, they will necessarily rest on psychology. Medicine, labor employment, and the treatment of antisocial individuals must discover some of their essential foundations in special applications of psychology. Women as home-makers and as mothers of children will, obviously, become increasingly dependent upon scientific knowledge of psychical processes, in proportion as it is found that instincts and customs are insufficient bases for their work under the conditions and standards of civilized societies. Hundreds of thousands of young men, eager to advance themselves in business, even now are making use of a variety of crude devices in "self-education."

1. Recalling your experience with yourself and others, what are some of the instinctive manifestations that have especially impressed you—anger, affection, desire for property, curiosity, and the like? Show how society—through parents, teachers, associates—encourages some of these instinctive manifestations and discourages others. What are some of the social instincts? Some individualistic instincts? Can these be "educated"?

2. What valuable facts or principles of a psychological kind did you understand before fourteen years of age? Separately consider: habit formation, control of emotions, devices of memorization, relations between powers of mental work and other physical conditions.

3. Does it seem to you now that "ideals" can be taught? What kinds? When taught, do they apply to considerable ranges of conduct? In what respects can you most influence the moral conduct of some of your associates?

4. Do you recognize among your associates individuals who in marked degree possess "trained minds"? Do these trained minds serve to give effectiveness to all varieties of activities, or chiefly to a particular few? In what respects do you regard yourself having a "trained mind," and in what respects do you seem to be deficient?

If the words "trained mind" are interpreted broadly to include trained powers of observation, of imagination, of concentration, and of reasoning, in

what respects would you say that the typical Indian savage had a "trained mind"? The Eskimo? The frontiersman (consider as trapper and hunter)? The street urchin?

What are some mental defects that we often associate with: literary genius; great powers of business organization; the creative imagination of the inventor or the scientist; and the absorption of the artist?

5. Is it your opinion that constant practice in the memorization of poetry ultimately leads to a very much increased facility in this field? Is it your opinion that prolonged study of poetry will greatly strengthen those powers that are called for in the solution of difficult mathematical problems?

GENERAL MENTAL SCIENCE

Can the mental sciences be taught in elementary and secondary schools? Is there any good reason why a "General Mental Science" should not be taught in any grade where "General Natural Science" or "General Social Science" can be taught?

It may seem that we have no adequate background of experience from which to derive answers to these questions. It is probably true that no serious attempts have been made to adapt psychology to the mental powers of secondary-school pupils. But for many decades, perhaps centuries, certain phases of applied psychology have been much worked over with relatively young learners. Moral education has always concerned itself greatly with "habit formation." Competent teachers, and certainly not least those of such historic formal subjects as Latin and mathematics, have often tried to help their pupils learn "how to study." Various "self-help" books, too, have assembled and interpreted experiences that classify properly under the mental sciences. Every generation witnesses revivals of popular interest in phrenology and in "magical systems of memory training." Probably every ambitious student of a foreign language has experimented with devices for aiding memorization of vocabulary. Parents as well as teachers have always had to study, empirically, problems of insuring attention, and others bearing upon the correction of bad habits. From time immemorial, parents, employers, educators, and other leaders have had to consider the "vocational placing" of young people—making selections, of course, by means of standards empirically arrived at. Vocational guidance now becomes an engrossing interest of many social economists, impressed, on the one hand, by the complexity of the modern economic environment, and on the other by the wide range of aptitudes actually found in young persons.

The elective system in schools from the fifth grade to the fifteenth

raises perplexing questions of mental adaptation. All studies now favored in secondary school and college are probably good—but certainly they are not equally good for all learners. It is easy to say at any stage that students "are not old enough to choose"—but who else is there, under ordinary administrative conditions, to do the choosing for them? No one but Old Man Tradition, who is a stickler for prescriptions and uniformities.

A proper pedagogy of general natural science teaching, when evolved, will certainly point the way to the practicability of short unit courses in "General Mental Science." Some of these might well center in problems of "How to Study"—French, arithmetic, or sports, as the case may be. Some topics might center in observations of how others—from a kitten or a baby to a classmate—seem to learn toward certain specified ends. It may prove expedient to associate some psychological testing with the studies in vocational guidance as these are likely to be developed in junior and senior high schools.

Probably it will be found desirable so to teach mental science that "subjective reference" be tempered and controlled—as is the necessity also with certain phases of physiology, hygiene, and even economics. The student should preferably look "out," not "in." He should see mental behavior (and its results) in others. He should be strongly predisposed by teachers against morbid self-evaluations—perhaps always in adolescence, and especially so if he tends toward introspectiveness.

THE TRAINED MIND

As stated earlier, educators may no longer rely upon the historic "panacea" doctrine of mental training. Neither can they use special dogmas based on the doctrine as goals and incentives in training students.

All the more reason why students should early acquire knowledge and ideals as to the real possibilities of mental training. As long as we interpret these objectively and concretely, we are on entirely safe ground. Let any theoretic "spread" take care of itself if necessary.

Mental testing now provides some means whereby parents and teachers may appraise the mental and other powers of learners—as wise coaches have long been doing in athletics. It is in the light of such appraisement that specific possibilities of mental training should be hereafter judged. The world always wants trained bodies, trained characters, trained minds—and it will need them in the future more than ever. Furthermore, real human happiness—as contrasted with that of a cabbage or a cow—

depends likewise upon trained bodies, moral character, and minds. Mental science study should give to all learners appreciations and understandings of these matters.

REQUIREMENTS FOR VOCATIONS

Needs for "trained" powers are probably most acutely felt by adults in connection with the vocational demands of civilized life. (It can be assumed that, sociologically, the defensive practices of men who are not professional soldiers constitute, in time of public danger, auxiliary vocations.) If we subject to quantitative vocational analysis the scores of specific powers making up in middle life the "success" or vocational proficiency, respectively, of super-average barbers, gardeners, bookkeepers, salesmen, public office holders, cooks, job printers, teachers, surgeons, chauffeurs, shoe-factory operatives, coal-miners, sailors, actors, and the like, we shall find that each class stands high in respect to certain fairly clear, and often very specific, powers of observation, concentration, imagination, memory, precision, and the like. These have been produced, upon plasticities given by heredity, through prolonged "vocational training"—at first imposed from without by vocational school, apprenticeship, or foreman, and later by efforts largely self-directed.

Practically all workers are employed under supervision in their early years. Employers are always searching, naturally, for the "most promising material"—the worth of which is commonly much more due to heredity or early home environment, and much less to schooling, than either educators or employers usually think. The best available youth or young manhood being found, there then begins focalization of attention, directed repetitive practice within delimited areas, elimination of ineffective procedures, formation of specific skills, increase of specific knowledge, cultivation of particular appreciations and ideals—and in time we have the trained worker, the successful producer of economic utilities.

It is obvious, of course, that every sucessful kind of vocational school, —for army officers, physicians, stenographers, elementary-school teachers, machinists, nurses, singers, waitresses, and poultry growers—simply organizes, economizes, and intensifies the processes elsewhere carried on through apprenticeship or through enforced "pick-up" methods. Each vocational school works hard to produce those particular varieties of trained hand, trained speech, trained character, trained body, trained sense, or trained "mind" that experience shows successful practice of the particular vocation in view to require. (No harm need result from the

use of these general catchwords, so long as we do not fall victims to their indeterminateness—so long, that is, as we stand ready mentally to supply the needed concrete qualifying terms when required.)

Hence it should not prove difficult to determine for school purposes, at least qualitatively, the desirable objectives of "mental training" in vocational schools. (It may prove endlessly difficult to give them scientific quantitative formulation, however.) The processes of contemporary "job analysis" are showing the way. In the case of vocational schools with several decades of history behind them, "trial and success" processes have already done much, where not baffled by long adherence to wrong principles of pedagogy—as witness the superiorities of the modern schools of law, nursing, and agriculture, among others.

In some cases there will be found, in schools not devoted primarily to vocational education, pre-vocational subjects, properly so-called. Already established examples are: algebra and trigonometry in high schools for prospective engineers; pre-medical biology and chemistry in liberal arts colleges; pre-machine-shop drafting in a few high schools; and pre-commercial typewriting or penmanship in junior high schools. These are all necessarily elective offerings in the schools in which they are found. It is entirely proper that these pre-vocational subjects be presented by such methods as will involve rigid forms of specific discipline appropriate to the vocational uses to which the resulting knowledge and technique shall later be put.

REQUIREMENTS OF CIVIC LIFE

Civic responsibilities of adults in modern democracies increase in number, and diversify in kind. For the proper discharge of these there should somewhere be found specific forms of mental discipline no less than of "moral discipline." Unfortunately, one of the obvious, but, we must hope, temporary, fruits of abundant democracy seems to be a quite general opposition to any form of close discipline whatever, especially among adolescent citizens. Not a few mature citizens are, indeed, in a sense "perpetual adolescents" in their hostility to rigorous control or training, physical or mental.

For the present, however, first blame must attach to the schools rather than to citizens for the low state, as respects mental discipline, of that education which is expected to function primarily in more efficient citizenship. What schools and colleges have offered as civic education—memorization and other drill on the anatomical details of history, verbal

study of the skeletal structures of national and state government, didactic presentation of the desiccated principles of economics—have usually lacked the essential characteristics of "functioning" disciplines. These studies have usually been hardly more realistic, vital, and convincingly "related to life" than have been algebra, Latin, and the eighteenth-century classics. We ought to be able to devise better discipline than these, and we can, given an appreciation of the need, and time for experimental work. The following are submitted as examples of right objectives carrying their own suggestions of method:

a. The citizen to-day must act largely in the light of the suggestions coming to him from the press. In federate societies, where nearly all legislative, executive, and judicial functions must be discharged by representatives, most of whom the voter has never met, and where proposals of policy, originating from a few creative minds, must be widely discussed and criticized, the individual citizen is very dependent upon what he reads.

The socially efficient citizen of to-day—that is, the citizen whose contributions to public opinion and practice through discussion and voting make for good public attitudes, good government, and social well-being generally—is the citizen who brings to his civic reading one large variety of that multifarious group of disciplines comprehended under the omnibus term "scientific method." He lives in the midst of the persuasions of daily, weekly, and monthly journals of more or less partizan bias. He is incessantly beset by the suggestions of newspaper headlines, the legends and cartoons of billboards, and the subtle arguments of editorials. He is like a judge listening to the arguments of opposed attorneys and the biased testimony of witnesses, some of whom, at least, he can well suspect of deliberate dishonesty.

It is through this maze of printed suggestion that the efficient citizen laboriously picks his way toward the truth, toward fair dealing, and toward sound civic decision. Obviously, this is a task for which men can be trained. Are our schools or colleges of any considerable service in this form of training now? It seems doubtful, to say the least.

And yet, here is a field of most positive, direct, and fruitful kind for the promotion of mental disciplines in schools. These headlines and billboards, sensational news items and editorials, journalistic commendations and fault-findings, are no less accessible to our junior and senior high school pupils than to our adult citizens—and often, with some guidance from teachers, they are no less comprehensible to our junior citizens. Why should not our teachers of civics exact of these still plastic citizens

in the making very substantial amounts of "training" in critical examinations of partizan methods, the comparative study of *ex-parte* contentions, the search for most probable sources of truth? Every specific strand of habit, appreciation, knowledge, ideal, thus acquired will probably be functional in the real situations later to be encountered in adult life. Why force the learner to "work" his brain in disentangling the dead and buried complexities of Roman or Elizabethan or even early American politics, when, for ten or fifteen cents, can be procured an armful of truly "original documents" wherein to decipher to-day's battles and to anticipate sound civic tactics for to-morrow?

"Relate education to life!" Certainly. But the wealth of printed documents that clog our mails at election time are the vital pulsating expression of our present political life. Only minds disciplined to deal with this kind of material can be our best and safest citizens. Now we leave that discipline largely to chance, or to the self-directed efforts of a few far-seeing spirits. Living in Newcastles, we bring some pitiful coals from afar, and wonder why our costly efforts are so futile. The third chapter of H. G. Wells' *New Machiavelli* has still a message for most of our school men.

b. There exists a second very practicable avenue for the development of disciplinary education directly in the interests of good citizenship. It is a truism that the largest single source of contemporary political problems is found in our modern complex economic life. Once government needed to concern itself with the economic life only to the extent of protecting property, levying fair taxes, insuring uniform measures, stabilizing currency, and mildly regulating international trade. Those days of simplicity are gone. Now government seems fated to affect our economic activities in a thousand of their most critical parts and processes.

The well intentioned citizen of to-day is confronted at all times when he must vote, and at other times when he must contribute to the formation of opinion on public policies, by economic "problems," some of which are no less intricate in their mechanical aspects than are mathematical problems, and the solutions of which are far more elusive because of the ethical factors involved.

But many of these problems, given a proper setting and exposition, are no more difficult than the arithmetical, geometrical, and algebraic problems with which, for generations, we seem fruitlessly to have taxed the minds of our youth, especially from the ages of twelve to eighteen. There is no harm in giving youth hard nuts to crack, provided the nuts

are known to have kernels, and provided the labor required is not so prolonged as to exclude time and spirit for the necessary more developmental or naturalistic kinds of educations. But it is surely wrong to ask youths to crack many hard nuts that we should know are void of kernels.

Can we educators not devise courses in vital contemporary economic problems, adapted to boys of average intelligence of twelve, again of fourteen, and again of sixteen years of age? Let them be hard problems. Let them be so arranged as to require closest attention and reasoning for their solution. Let them exact sustained and concentrated mental effort no less than do problems in mensuration, with equations of two or more unknown quantities, or in the applications of sines and tangents.

Our prospective citizens, cutting their intellectual teeth on these problems, will thus be acquiring specific forms of mental training that will be functional throughout adult life. With reference to such training certainly no mystical uncertainties as to "transfer" need be encountered.

REQUIREMENTS FOR CULTURE

"Culture," in any distinctive and adequate meaning of the term, involves relatively few "powers of execution" or "performance powers"; but it does involve a very wide range of "appreciations." Appreciations visibly grow in all social environments, upon bases of instinct, through imitation and other experience. The psychology underlying the teaching of various forms of appreciation seems yet too obscure to enable us to speak with confidence of the practicability of "training" powers or capacities of appreciation. Perhaps we shall yet find that acceptably functioning varieties of mental discipline can be had in training toward definite appreciations for adult life.

Some of the "performance powers" essential to the culture of adults in modern civilization are, however, acquired in early youth. Silent reading, handwriting, spelling, "consumers'" arithmetic (as distinguished from vocational arithmetic), and a few essentials of oral and written composition are the most obvious of these. Somewhere in the grades are acquired formal masteries of certain salient elements in geography and in American history, the accurate mental retention of which constitute in effect also "cultural performance powers"—or "intellectual tools," as they are sometimes called.

It is obvious that, with reference to the acquisition of these powers, efficient education should employ the maximum of mental training essen-

tial to their permanent functioning. The handwriting habits established in youth should be so deeply fixed that they will persist throughout adult years, always adding further "character." It might not be inopportune, indeed, to try to establish at the same time certain permanent ideals of legibility or grace of handwriting which, like ideals of good manners, would remain functional throughout life. Each elementary-school subject designed to establish enduring "performance powers" should, therefore, be accompanied by its due measure of exacting mental training. (Let it not be assumed that such specific training is not practicable under the "project method"; it is too early to say with confidence what is, and what is not, practicable under that method.)

The second large field for mental discipline of known kinds in cultural education is found in the freely sought cultivation of specialized powers. A cultured society is assured only in part by bringing all persons up to certain levels of performance or appreciation. Beyond that is needed endless diversity of specialized powers and tastes.

We can imagine a city with high cultural standards in which a small fraction of the adults would be, quite apart from their vocational pursuits, devotees of the Greek and Roman classics; another fraction enthusiastic amateur violinists; a third group would be eager naturalists; whilst still another would devote themselves with much zeal to the study of Chinese and Japanese languages and literature.

To these varieties of specialized cultures there is every reason why school and college should contribute through elective courses so organized as to attract only the talented, and so conducted as to retain only those willing to subject themselves, for "love of the goal," to exacting processes of training. Obviously, then, from these sources are to be derived numberless forms of "functioning mental training."

(For supplemental readings see references following Ch. 32.)

CHAPTER XXII

THE GRAPHIC AND PLASTIC ARTS

INTERPRETATIONS OF EXPERIENCE

WE Americans, to an extent probably never before equaled among any people, live in the midst of "applied" art. The clothing of ourselves and others, the furnishings of our rooms, the exteriors of our houses, the typography and pictures of printed pages, and the lures of advertisers are almost incessantly before our eyes. We pay liberally to see moving pictures. Amateur and professional photography play large rôles among us. Our wagons, automobiles, and harvesting machines are all painted and shaped with some degree of esthetic motive. The bindings of our books and the covers of our magazines profusely exhibit the craft of artist and engraver. We never-endingly criticize one another's taste in dress, rugs, and jewelry.

About half a century ago we began to take seriously the matter of teaching drawing and art in our public schools. To this day we do not exactly know why—that is, our purposes are not yet sufficiently definite and tested to enable us confidently to say that by this or that method we actually are enriching our social life. We are here to a peculiar extent the victims of "faith objectives"—and strongly colored by conventions and traditions, at that.

1. Why do you think we should teach more "graphic and plastic art" (hereafter, in conformity with current depraved usage, conveniently called "art") in our public schools? In what respects as a people are we harmfully "short" in art? Where are these shortages most manifest—in dress, architecture, tools, pictures, the "pure" arts of painting and sculpture?

2. Is it well for us that we put so much money into advertising art? What social service (or disservice) does such art render?

3. What is now usually meant by these as school subjects: drawing; mechanical drawing; design; modeling; color work; applied art; commercial art; industrial arts (first four grades); industrial arts (seventh and eighth grades); industrial arts (special secondary or higher schools); domestic art; art appreciation?

4. What are now positions usually taken by well informed opinion as to the desirability of including these subjects in public-school curricula? Should courses in any one of them be prescribed for all? At what ages? Should any course be prescribed for talented pupils? For pupils inferior in other

subjects? For pupils in particular kinds of vocational schools? For what reasons, in each case?

5. What are, in your opinion, the purposes or aims that would justify the teaching of: some drawing to all pupils; to some pupils; modeling to all; or to some; art appreciation to all; to some? In what grades or types of schools? At what permissible cost of time and money?

6. What is the meaning of the phrase "drawing as a means of expression"? Expression of what? What are the deficiencies of language as a means of expression for you? For a traveler? For a designer-craftsman? For a mechanic? To what extent can the spinners, weavers, and other operatives in a modern textile mill affect the color and form harmonies that enter into the fabrics produced? Whence originate the designs used in silk and cotton goods now produced in America?

7. What have been, in selected historic periods, the "social values" of sculpture? Was Greek and Renaissance Italian sculpture provided primarily to satisfy desires for the "beautiful"? Or to satisfy other desires—*e.g.*, for permanent record of glorious events, portrayal of physical "fineness," remembrance of the departed, worth of deities—partly through medium of esthetic appeal? What sculpture now makes a considerable popular appeal? Or appeal to educated taste? Can we "educate" our young people in "appreciation" of good sculpture? Why do it if we can? Is it probable that we shall again have a revival of sculpture as a fine art?

8. What were the "social values" of painting prior to the discoveries of printing and photography? How was it used in elevating worship, martial virtues, morals? What are now the more obvious social values of painting, pictorial art (printed reproductions), and photographic art (cinema) respectively? What could be the objectives of education toward "appreciation" of these forms of art? Do "esthetic" elements play a large part in them? Of what nature?

9. What are social values—religious, political, esthetic, economic, and others—sought through architecture? What contributions to social well-being seem to have accrued from: the Pyramids; Egyptian temples; Greek temples; Roman political buildings; Gothic churches; French villas; American "skyscrapers"? Would it be practicable to educate pupils in appreciation of "good" architecture? Are standards of good architecture settled in America?

10. Estimate the "proportion of market value" in the following that is due to harmonies of form and color—to the appeal, that is, to the esthetic instincts: brooches; gowns for dancing; the altars of rich Catholic churches; watches costing fifty dollars or more; automobiles costing upward of five thousand dollars; state capitols; men's neckties; table equipment for banquets.

11. Similarly, estimate proportion of "market value" due to art factors in: a frontiersman's log cabins; automobiles costing less than one thousand dollars;

working shoes; girls' working house dresses; doorways of small renting houses; farmers' pocket knives; typewriting machines; warehouses.

12. Divide material utilities into four categories, A, B, C, D, according to the relative importance in them of esthetic elements, those of Class A having, like jewelry, laces, and expensive churches, the largest amounts. Where would you place these: ordinary kitchen utensils; a carpenter's tools; an infant's outfit costing more than ten dollars; a man's business suit; the buildings along "Main Street"; cheaper grades of wall paper; farm wagons; chandeliers (electric) in small suburban homes; women's hats in 1890; recently built locomotives; bindings of recent novels; ordinary "front" gardens in suburban homes?

13. Are the "American people" seriously deficient in appreciations of harmonies of form and color? What is the evidence? Were we "better" in colonial days? Are the Italians better now? Were they in the fifteenth century? What does a mail-order house catalogue tell you?

Should we, and can we, teach in schools appreciation of the esthetic qualities in objects of every-day utility? Has it ever been done? By what means do you think it can be done? Is it done in France, Japan, England?

14. Assume yourself directed to teach as much "esthetic" appreciation of architecture, landscape, dress, and furniture as practicable in one hundred hours, to one hundred boys and girls, ages twelve to fifteen, leaving school at fifteen. They live in a "small city" environment. How would you proceed? Would you have them execute many drawings? Of what? Would you assemble pictures? Of what? Would you have excursions? Whither and to what ends?

15. Is it important that drawing be taught for vocational ends? For what vocations—those of gardener, stenographer, waitress, carpenter, teacher of French, sailor, dentist, grocery-store clerk, actress, coal-miner, dairy husbandman, tailor, home-maker, truck driver, dressmaker, plumber, lumberman? Should special drawing for these vocations be confined to the vocational school? Do manual workers in general now have any considerable need of drawing?

THE OBJECTIVES OF ART EDUCATION

These five basic objectives will, it is probable, control in the art education of the more comprehensive and richer civilization toward which we hope we are moving:

1. Systematic effort will be made to elevate within moderate limits the utilizing tastes or appreciations of all, as a part of general education.

2. Provision will be made for the extended education in taste or critical appreciation of those having special interests, abilities, and opportunities,

as part of elective cultural education. These persons will correspond to the connoisseurs who are at present produced largely by self-education.

3. A small proportion of our youths, selected because of evident promise as producers of art qualities in some of their numerous forms, will be encouraged and assisted. They will be given high-grade specialist service, in the hope that productive proficiency in the art-using vocations will result.

4. Another small proportion of talented persons will, if they desire it, be given special facilities for becoming producers of art qualities as avocations or on the basis of amateur performance.

5. Persons electing specialized vocational training for productive occupations involving art factors, such as carpentry, house painting, job printing, gardening, and others yet to be analyzed, but excluding, of course, those forms of large-scale production in which artistic designing is a specialized function, will be given special training in needed forms of appreciation and execution in their vocational schools.

Social needs for each of the foregoing forms of art education still require analysis and comparative evaluation. It is clear that in all production by power-driven machinery the introduction of art factors is being increasingly delegated to specialists. Nearly all the cloth, clothes, shoes, furniture, printed pages, tableware, bookbindings, lighting fixtures, vehicles, rugs, food cartons, hand tools, and house trimmings now used by the hundred million relatively lavish consumers of this rich country, are produced under conditions and on scales that place a great premium on the services of a comparatively small number of highly talented designers. Probably any country striving to excel in high-grade manufacture should seek out and highly cultivate its most promising talent in artistic design for these fields. For half a century we have planned to do this in America, but thus far, the critics tell us, with indifferent success.

Many lines of production rest wholly or partly on a handicraft basis. Where a handicraftman tries to compete with machinery, the product—for example, garments, furniture, rugs, jewelry, bookbindings, automobile bodies, and pictures—will usually become accessible only to the wealthy, or else it will be carelessly thrown together for the poor. But in many vocations, of which the building trades, the repair trades, gardening, job printing, table service, and certain varieties of personal adornment are noteworthy examples, machinery can compete but little, if at all. Art factors appear in some degree in all of these. Probably these art factors should be the concern of the specialized vocational schools for these callings.

ART APPRECIATION AS A GENERAL OBJECTIVE

The production of art in any place and at any time will be greatly affected, of course, by intelligent, persistent, and tastefully exacting demand. International trade, indeed, will assure any modern people a large and varied supply of art products, even if it produce none within its own boundaries. Under present-day democratic conditions, it is very probable that basic demands for art education assume the possible creation throughout a large proportion of society of refined and elevated appreciations of art qualities. We need, then, more and better art appreciation in America. The most efficacious and speedy method of developing art appreciation is to teach it in our schools; but it is hard to go beyond this point. Have we a pedagogy of art appreciation? Have we successful schemes of educational aim or method here? Have we concrete objectives? Or have we only aspirations and some "faith" objectives?

Some elements of the problem are obvious to those who will observe. All persons, apparently as a part of their instinctive nature, have preferences and desires, which are sometimes intense and poignant, for some of those harmonies of color, form, and shade that are basic to graphic and plastic art. Many, if not all, readily respond in variable degrees to the educative effects of example, instruction, and criticism as found in the social environment, by modifying tastes already formed, thus adopting conventional appreciations. What we commonly accept as art appreciation is frequently, if not always, charged or mixed with certain other qualities having little or nothing to do with pure esthetic sensibility. The most common of these are associations and fashions. What is loosely called the beautiful may often be precious to sentiment, in part because of old friendly associations, or because of that herd interest, or approval, called fashion. Among the supposedly élite in art appreciation there are often found persistent and radical differences of standards. In this situation the education of the young becomes, to say the least, uncertain and confused.

Definitions of art appreciation in its various manifestations are but slightly developed as yet. Words such as "liking," "desire," "taste," "appetite," "interest," and "satisfaction" express states of consciousness which, operating in esthetic areas, rest on appreciations. Educated, as distinguished from instinctive, appreciations usually involve more of conscious valuation, sense of worth, perhaps even reference to standards. For all of us not gifted with philosophic insight, the best road to understand-

ing here is through inductive assembling of examples. We all have appreciations in thousandfold varieties; our neighbors have them in more or less different forms from us; and we are always changing our appreciations in some slight measure. Sociology, no less than education, can well ask as its first questions, "Appreciations of what?" and "Appreciations by what standards?"

The objects utilized by civilized man are now beyond easy computation. Clothing, foodstuffs, houses, vehicles, books, highways, furniture, tools, domestic animals, are some of the large groups. These objects are valued for many reasons. A cloak shields from the cold, contributes to the covering desired by modesty, protects from brambles, provides carrying pockets, renders the person more beautiful, and may be a thing of beauty in itself, apart from its decorative qualities. A framed picture breaks an excessive expanse of plain wall, suggests interesting and possibly useful knowledge, decorates the room, and perhaps provides a distinctive esthetic appeal all its own.

Decorative purposes determine almost wholly demands for some articles. Ornamental jewelry, bric-à-brac, bouquets, and some paintings belong in this class. But many products of the highest artistic effort are prized, primarily, for the contributions they make to spiritual or non-esthetic emotional satisfactions. Greek temples, Christian churches, martial painting, memorial monuments, tapestries, ceremonial garments, festal displays, and pageants are, in their wholesome origins at least, valued because of the reverence, patriotic spirit, affection, or profound understandings that they inspire. Harmonies of color and form are employed in them as means, not as ends. Material beauty aids the communication but is not of the message communicated. We are told that many of the paintings of the Renaissance were not intended for the detached and isolated positions now occupied by them in galleries. Much of Greek statuary was similarly functional in structures designed primarily for other than esthetic ends. Flowers separated from their home settings may bring their fragrance and color to our tables, but nature seems to have desired finer uses for them.

ART IN UTILIZATION

The study of man as a utilizer seems to support these findings. He has many wants or desires, all resting on instincts, and all more or less susceptible to education. Among these wants are cravings for gratification of the esthetic sensibilities. At some stage, usually not the earliest

in nearly all his outreachings for the means of satisfying his wants, he becomes conscious of these esthetic desires or needs. But his needs, as he feels them, vary greatly in direction and intensity, according to circumstances. In relation to the primary needs for security, food, shelter, reproduction, and placation of deities, his esthetic needs are secondary, even derivative. Elemental man in his hunger will take food without artificial flavor, garnishment, or refined service; in his need for shelter he will take a cave, a hovel, or a shack, careless of intrinsic beauty or decoration; for protection from cold and brambles he gladly accepts body covering beautified by no harmonies of line, color, or shade.

We know very little about the biological sources of the instincts for the esthetic. We know hardly more about their development and actual services among primitive peoples. But in historic societies many tendencies can be studied. The most significant of these, for our purposes, is found in man as the artificer. Our remote ancestors could only take as nature gave. Modern man, as maker, fashioner, inventor, designer, handicraftsman, manufacturer, and beautifier, innovates, creates, and copies endlessly. In the products that man makes for himself, or pays others to make, valued qualities are combined. In crude terms, we say that a tool, hat, chair, or automobile is useful and beautiful, or useful without being beautiful, or even sometimes beautiful without being very useful. Under "useful" we include only values that are non-esthetic. Qualities of beauty are no less "useful" in a fundamental sense than others, although they are commonly less contributory to elemental needs of survival.

Because man's products, or his choice gatherings of strictly natural objects, combine esthetic with other valued qualities, it should be practicable for psychologists and educators to detach and evaluate each type of value separately, as the chemist separates elements, the biologist functions, and the psychologist types of mental reaction. Can we get at the essential factors in education for appreciation in any other way? Can we get away from present obscurities in any other way? The writer thinks not.

GRADING OF ESTHETIC VALUES

Problems of esthetic values may be attacked in this way: Establish four categories, A, B, C, and D, within which to classify articles according to their possession, under conditions of normal social demand, of much or little of the qualities called esthetic or artistic. Let us place in Class A those articles that are valued primarily for their beauty, and in Class D

those in which harmonies of form and color play very little part. It might prove practicable so to measure utilizer's valuations that we could place in Class A those things in which the esthetic constitutes from 80 to 100 per cent. of their value; in Class B those in which the esthetic value is from 50 to 80 per cent.; in Class C those in which it is from 20 to 50 per cent.; and in Class D all those in which it is less than 20 per cent.

Having these categories, would a well informed jury agree that in the first class we should place necklaces, men's stickpins and neckties, flowers on tables, church-altar decorations, wall pictures, women's festive hats, certain library books, and monuments? Would they place in the second, or B, category the parlor furniture of the rich, ball-room gowns, opera-house interiors, state capitols, well bound books, and some parks? In category C would there be placed business men's clothes, all high-priced automobiles, railway-car furnishings, cottages, parks, razors, and other tools for personal use, expensive shoes, watches, some bridges, and table-ware for festive occasions? Should we place in category D locomotives, warehouses, log cabins, working clothes, school books, ordinary roads, kitchen furniture, and the countless tools wherewith we work? Where should we place college buildings, steel bridges, some recently built concrete bridges, the more expensive magazines, electric-light fixtures, modern firearms, clothes for small children, office furniture, ordinary automobiles, men's evening clothes, window displays of dry goods in a large city, the scenery of a recent performance of *Macbeth,* Gothic cathedrals, American wooden churches, West Point buildings, and Mission furniture?

Until we can obtain some classifications generally agreed upon, as here suggested, it would seem that proposals for teaching art appreciation are likely to increase rather than diminish the prevailing confusion, which seems no less in evidence among the specialists, practitioners, and connoisseurs in the art-world itself than among the public at large.

STANDARDS OF ART APPRECIATION NOW FOUND

Before talking about improving tastes or standards of esthetic utilization, we should know our present status. We are, of course, incessantly criticizing one another's tastes, but our own standards for such criticism are largely subjective. Might it not be profitable to attempt here the methods of the survey on the basis of some accepted objective standards, or union of subjective standards? For this purpose it would be necessary to take a selected area, geographical or social. Suppose a study were made in a given state of the young women, chosen at random, from twenty-

four to thirty-five years of age, recently married, with family incomes of more than twelve hundred dollars and less than eighteen hundred dollars a year. Assume the survey restricted to those with more than six grades, but less than eleven grades, of public-school education.

These women are utilizers, not only so far as their personal needs are concerned, but because they are largely in effect the purchasing agents for their homes, for their children, and, in several respects, even for their husbands. Often their preferences far outrun the purchasing powers of the family incomes. Proper standards of evaluating their tastes, therefore, will have to take account of necessary limitations in their present spending powers. Means could be found for testing and appraising the prevailing tastes of these women within each of a variety of fields. The judges, having agreed upon reasonable standards, could rank these women in terms of such standards as excellent, good, fair, poor, or bad, in respect to esthetic appreciations of personal dress, dress of children, furniture, tableware, food service, fine-art exhibits, garden, house, moving pictures, and natural scenery.

Other groups could be similarly studied. In respect to several types of utilities, what are the prevailing tastes of negro women in Alabama, recently immigrated Italian men of low economic rank, prosperous farmers' wives in Ohio, college boys in older universities, women art students, and others?

Cultural education in art will be very difficult to promote in America as a general movement unless and until leaders are substantially agreed as to deficiencies, explicitly and concretely defined, now prevailing among specified classes of the population. It will be well, too, for art teachers to undertake this form of study. It will compel them, as nothing else could, to define their standards, analyze their fields of work, and find themselves.

INDIRECT METHODS OF TEACHING ART APPRECIATION

Two methods of teaching various forms of art appreciation will here be called indirect; first, that of teaching principles, and second that of teaching through construction or production. In every department of education men have always sought the short cuts of speedy intellectual grasp of principles. Some great mind will one day write a history of teaching methods, which will show the numberless graveyards of logical approaches in arithmetic, mathematics, reading, science, manual training, music, logic, foreign language, and the rest.

Our forefathers used to teach reading by means of endless drills on syllables, real and unreal. They taught penmanship by long drills on "up curves" and "pot-hooks." Foreign-language study involved numberless exercises in writing out "the umbrella of the aunt of my sister-in-law," and other nonsensical statements, and in memorizing the rhymes built up of Latin endings. Logic had its abstract symbolism, and geography ran to verse. Even now, pedagogues believe that decisions in civic matters can be prepared for through mastery of principles deducible from the history of the past. We still teach relatively pure mathematics and physics as foundations for home-making and for electrical engineering. But, in proportion as we have democratized education, we have become distrustful of methods designed to give an early grasp of principles. Practical teachers, studying the results of their work, find, probably, that average minds do not make much progress on this road. Psychology may yet show us that only a few rare minds can readily apprehend and apply principles, whether in grammar or statecraft, mechanics or the esthetic.

Artists and teachers of art undoubtedly possess gifts that enable them readily to apperceive the fundamentals of color and form harmonies, after which they can readily apply their knowledge to the interpretation of concrete and very composite situations as presented directly to their senses and understanding. Certainly, similarly gifted minds are found working with mathematics, mechanics, language, and business. But the great majority, who are not instinctively driven to become worshipers at the shrines of art, probably possess gifts of intuitive art interest in much less degree than do the art teachers. Here, again, the correspondence of art powers to those of mathematics, mechanics, language, and business is plain.

Hence, we should be chary of assuming that others can come to higher stages of appreciation by the roads that have proved easy for art experts. We should be warned by the futility of much of the instruction and training given in the past. In most cases it would seem to have been seed sown on the rock. We need to study the processes by which taste has been improved in recent years in domestic architecture, illustration, and kindred fields as results of European travel, the competitions of publishers, and other very direct and objective appeals to the eye, quite apart from intellectual apprehension of underlying principles.

The second indirect method of teaching appreciation is to induce the learner to become, for a time, a producer. To acquire esthetic appreciations of furniture, pictures, or dresses, let us first do what we can to produce, perhaps in very amateur fashion, some articles of furniture, some

pictures, or some dresses. There can be no dispute as to the validity of this method when honestly employed with objects within the learner's amateur grasp. It is used at present in teaching short-story writing, appreciation of drama, the making of dresses, and occasionally in the fields of pottery, simple furniture, and jewelry. It is also used occasionally in typography. It probably can not be employed practically in teaching appreciation of novels, automobiles, bookbindings, parks, music, shoes, men's clothing, parlor furniture, silverware, and bridges. Probably it can be employed extensively in hairdressing, table-setting, and room ornamentation. Certain modifications of it need to be carefully examined. Can we teach art in clothing by dressing dolls, or taste in wall papers by stenciling designs, or appreciation of paintings by the crude little products of high-school children? Perhaps posters and cartoons come within workable categories.

DIRECT METHODS OF TEACHING ART APPRECIATION

Have our schools ever attempted to teach specific forms of art appreciation by direct methods? Recorded instances seem very few and fragmentary. Certainly a large field here lies open to experimentation. A concrete problem like the following could easily be experimented with:

There are on the market probably scores of varieties of teaspoons, ranging from the very inexpensive to the very expensive. The art qualities of these range from poor to excellent, but there is no necessarily close correlation between price and artistic quality. Suppose we arrange a traveling exhibit of fifty specimens of teaspoons of all kinds. The exhibit is brought before a sixth grade. A pupil is asked to take the jumbled collection and arrange the spoons, first, in order of "pretty to ugly," without further direction, making a record, by the numbers on the spoons, of her choices. The spoons are again jumbled, and other pupils do likewise. Then a general discussion is held relative to the esthetic qualities manifest in the spoons. Again pupils arrange the spoons in order from "most beautiful" to "most ugly" or "least beautiful," by the standards of esthetic excellence stated as "That which I think I should like for many years, and for use with good company." Suppose this experiment repeated for a given group at intervals of two years in their sixth, eighth, and tenth grades, in the last case in connection with cultural home economics. As a result, would not abiding appreciations of "good form" in spoons be almost certainly produced in nearly all the pupils?

To apply similar methods in the case of wall papers and furniture would

probably necessitate, in cities, stationary exhibits to which classes could be taken. Would that be difficult or expensive in a city of one hundred thousand people? Such exhibits would, of course, have to exclude the merely curious or historic, and be confined to probably available offerings of current markets. For adults it might be practicable to provide more central and comprehensive exhibits to initiate new standards of demand.

Appreciation of domestic architecture might be advanced in the same way. Let us imagine one or two art teachers in a city undertaking such education of the rising generation. What should be their best laboratory? Surely the houses on the streets of their own city. Among these are hundreds of examples, none wholly bad, none ideally good, but all with good and bad points. For each of grades 8, 10, and 12, these teachers have, let us assume, nine hours for each class, to use in periods of three hours each. These periods should be devoted to conducted excursions, followed by discussions, and then by pictures and easy general reading about essentials of artistic architecture. Up to certain moderate limits, at least, would not such a method establish some good standards and initiate new esthetic interests?

It is not certain that art teachers would yet be willing to enter upon the difficult field of women's dress. But we can not dodge the obvious fact that hereabouts are exercised the esthetic interests of women from fifteen to thirty, and often much later in life, to degrees unsurpassed by their artistic interests in all other fields together. Should not the study of good art, like the practice of charity, begin at home? And how very accessible are the means for such study. True, the situation is complicated by those elusive social phenomena comprehensively called "fashion." One has a disturbed feeling that even experienced art teachers find themselves, like King Arthur in Lyonnesse, in a region of mystic confusion where dress is concerned.

A certain school in New York City prepares girls for office positions. The faculty, among other things, seek to define for the girls acceptable standards of dress and personal behavior for the working positions in view. Then the class, by vote, selects that member who, in their judgment, most nearly approximates the idealized standards in specified respects.

All our pupils live in a world thronged with art-embodying objects. Are we to fail in constantly directing and improving their appreciations here? Can we not by attention to this world, by record of preferences, and by discussion of comparative choices, not only constantly impress standards of comparative choices, not only constantly impress standards

of worth, but also interpret and evaluate their objective exhibitions all around us? Must we still always put the cart before the horse in teaching the abstract before the concrete, the unknown before the known, the remote before the near, the unreal, apperceptively considered, before the real?

Let us never forget that some creature closely related to Mrs. Grundy is always busy at this work of educating appreciations. Where the shod feet of girls are concerned, she takes the form of a young man who will dance only with "French heels." In the case of the housewife's rugs, she comes in the guise of neighbors up and down the street. The clubwoman, the traveling salesman, the "man milliner," and the ready-made clothing manufacturers know perfectly well who she is. The architect, bookbinder, illustrator, bridge builder, and tableware designer find her more elusive; whilst she is, of course, the despair of sculptors and public-monument designers. But, like her co-worker in social morals, she is useful only on the lower levels of life. She is moody, and of uncertain standards. She needs to be replaced by more modern agents. She has done frontier America good service. But the frontier has gone forever. We must build for time now, not for the moment.

PROBLEMS

1. Is it educationally scientific and useful to divide the objectives of all graphic and plastic art education into these classes:

a. Free-hand and instrumental pencil work, brush work, stencil and modeling (with minor examples in crafts, such as wood, lace, soft metal, etc.) as developmental subjects for children from three years of age upward, going little beyond naturalistic standards of method, and having as controlling objectives, first developmental experience and expression, and second projective applications and amateur interests?

b. Mechanical drawing as a pre-vocational subject, related vocational subject, or specifically vocational subject?

c. Free-hand drawing and painting as a pre-vocational or vocational subject (for specific vocations) or as an avocational interest?

d. Any one of many forms of graphic and plastic art as pre-vocational, vocational, or avocational?

e. Any one of several forms of intensive cultivation of appreciation of form, color, or shade harmonies in application (to architecture, dress, furniture, jewelry, landscapes, bric-à-brac, tools, etc.). Sound formulation of objectives requires that we always specify areas of application,

e.g., spoons, rugs, cottages, women's hats, saws, coaches, watches, park walls, bridges.

2. Is it (*a*) desirable, and (*b*) practicable, that the following principles guide the teaching of graphic and plastic art in schools:

a. That in all grades, from the kindergarten through at least the tenth, elective units from *developmental* art subjects be freely offered without drill and with a minimum of technical process, the dominating spirit being that of amateur performance, the work being little standardized, and largely devoid of projective aims?

b. That in the upper grades and throughout the high school, as circumstances permit, elective units of training in appreciation of art in specific applications be offered—varying from printed pictures, wall papers, tableware, and dress to photodrama, painting, sculpture, and local architecture?

c. That elective units in amateur production toward cultural specialties (avocations or connoisseurship) be offered persons of manifest talent from ten years of age onward (specify kinds)?

d. That pre-vocational units of mechanical drawing (and freehand sketching and designing?) be made available in junior and senior high schools to students of manifest promise?

e. That training for artistic service in the art-using vocations be provided for in central schools for youths from sixteen upward, with facilities for close correlated study of related mechanical processes?

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CHAPTER XXIII

MUSIC

INTERPRETATIONS OF EXPERIENCE

EACH one of us is possessed of a variety of sensibilities or powers of appreciation that are called "esthetic." All of the senses, as well as internal powers of imagery and sentiment-formation, doubtless have their esthetic aspects or factors. But it is not now socially popular among peoples of "cultured" tastes to ascribe to, or seek to derive esthetic satisfactions of more than trifling importance from the temperature, tactual, gustatory, and olfactory senses. The *beautiful* is sought after through the higher senses—sight and hearing—and the imagination and higher forms of sentiment.

Many sources of esthetic gratification or repulsion are involved in objects that are desired or avoided for other reasons as well. Only a small proportion of plastic art is found apart from objects of utility. Literary art is frequently tied up with other objectives of communication. We attend the moving pictures for knowledge as well as esthetic satisfactions.

Of all the esthetic arts, music is the one most completely divorced from immediately "utilitarian" adjuncts. In a profounder sense, it has certainly been one of the most serviceable of the arts in drawing men to God, stimulating martial ardor, refining lustful feelings, cheering the depressed, and heartening men for work. Though still greatly sought after, it is not clear that it now carries these sociological values to the same extent as formerly. Perhaps education can make it do so—who knows?

1. Do you and your associates *naturally* care for music? What kinds, especially? Do you find that uneducated men and women also have strong desires for music? What racial groups have strong desires for music? What tastes do they show? Are these desires chiefly for music that others render, or are they desirous of rendering music themselves?

2. Analyze your experiences with the learning of music through imitation —children following after elders, spread of popular songs, participating in college songs, sharing in the chorus, and the like.

3. Is it your experience that music is a useful aid in worship? What kinds of music? What kinds of religious sentiment seem favored by it? What differences of effect probably result from "congregation," as against "choir," singing? Where congregations can be induced to sing much, what are the effects of "poor" singing on the singer? On the better singers whom he reinforces or obstructs? What are some of the qualities of the organ that seem

to have given it such vogue as an aid to religious music? Apart from the character of rendition, what seem to you some of the characteristics of valuable or helpful religious music; of poor or hurtful religious music? Will such valuations depend considerably on the musical education or sophistication of the hearer?

4. What have been some of the evident uses of "war" or patriotic music? What were the half-dozen most "martial" songs of the Civil War? Of the "Great War"—1914-18? What specific emotions does martial music evoke? Would a country or an army, without appealing and popular martial songs, be probably weakened for war on that account? Would you expect war music to be relatively more important for savage or illiterate soldiers, than for highly educated men defending their country? In what ways does it seem probable that the "scientific" character of modern war renders martial music and all other appeals to the emotions less serviceable than it was under more "face-to-face" fighting?

5. Does it seem to you that "love music" plays a large part in modern life? What proportions of "concert" songs center in love themes? Do "lovers" now court the objects of their affection largely through song, guitar, etc.? Why? Do "lovelorn" maidens now sing their sentiments?

Under simple social conditions, show how prevalence of love music probably refined and ennobled the sex instincts and helped toward elevating the betrothal period and "socially good" marriage.

6. In your experience, is music an important means of social or spiritual recreation or healthful diversion? What kinds of music? For what conditions of "fatigue" or need? Does it seem probable that technically "good" music is important for these purposes—or does any simple music "satisfy"?

7. It is often said that music is a great "moralizing" force. Apart from the martial, religious, and marital virtues already referred to, in what respects can it, or has it, been used to establish moral ideals, sentiments, and behavior? Separately consider forgiveness, industriousness, thrift, tolerance, moral courage, kindliness toward childhood, friendship, respect for aged, and other social virtues.

8. Does it seem (*a*) practicable, and (*b*), even at considerable expense, desirable: to teach all children to sing imitatively, as individuals or in chorus; to teach all to read notation readily; to educate toward higher forms of appreciation? Does it seem necessary to educate utilizers of phonograph music to choose "better" records? Analyze the character of the music now usually found in moving-picture houses.

SOCIAL FUNCTIONS OF MUSIC

Keen desires for music seem to exist in all human beings. The amount of money spent annually upon all forms of music in the United States

has not been exactly computed, but unquestionably it exceeds in its total half of all the moneys expended upon all forms of school education.

Under primitive social conditions, as well as under simple conditions of civilized society, large numbers of persons seem disposed and able to *execute* music—to sing individually or in chorus and to play simple instruments. Under the complex conditions of modern, and especially urban, life, the performance of music becomes largely a *commercialized* process, which permits exacting selection of native talent and extensive training. Tastes for difficult music, or for highly artistic rendition, grow more exacting, and, apparently, amateur performance is less sought after and tolerated.

A musical education for all children—that is the ambition of many enthusiasts. For several decades steadily increasing attention has been given to the promotion of music in American public schools. But the objectives of this have not been well defined, and results have been far from satisfactory. Until more clear-cut purposes shall have been agreed upon, a large part of the money and energy expended on musical training in schools will almost inevitably be wasted.

These purposes must, however, be determined through a study of social needs to be met. These are still obscure. Inductive study of social activities seems to show that many kinds of needs—some personal, some of a very social character—are ministered to by music, and by music of different types.

Martial music obviously plays a large part in uniting and stimulating peoples to meet that most drastic of all visible tests of political solidarity —war. Every people striving to promote or defend its tribal or national solidarity evolves or adapts martial music. Patriotic fervor seems to be both cause and effect of this music. Soldiers marching to combat seem instinctively to sing, whilst their mothers, wives, and other necessary home stayers eagerly cheer and sing them toward victory. "If the South had had the songs of the North, it would have won the war"—this was said with reference to the American Civil War of 1861. From the tomtom and wooden drums of savages, to the *Marseillaise* and *Wacht am Rhein,* all war—aggressive and defensive—has had its accompaniments of music.

Religious music seems also to have played a mighty rôle in social evolution. From the efforts of the most primitive men known, to those of fashionable groups in modern capitals, music of one sort or another follows man's effort to placate deities and exorcise demons. Some kinds of music, obviously, do greatly stir the various emotions that make up

or accompany religion—including remorse for sin, affection for saints or the departed dead, reverence and awe of deified majesty. Religious music makes men religious—it can even evoke conversion; and in turn the religious man, like the martial man, seems greatly impelled to express his feelings in music. The numberless songs used by the Protestant churches in converting or holding frontier America to the Christian faith represent, sociologically, one of the remarkable achievements of collective effort. It is noteworthy, too, that when martial or political effort reaches its most exalted stages, it draws heavily upon religious music.

Music of love seems also to have served a large function in all social life, though it is alleged to be absent from the love of primitive Africans. The gamut of music is so great, indeed, that it can be used, apparently, to stimulate in a great variety of helpful and injurious ways the sentiments that attract men and women toward each other. It is sociologically very probable that as society struggled to evolve the family, and more particularly the monogamous family, approaches to which should culminate in the ceremony of marriage, it was found expedient and desirable —always first, of course, by elders and other experienced and far-sighted ones—to subject to special controls and development all those approaches which we call courtship. Naturally, the songs or other music that "short-circuited" or otherwise debased courtship were tabooed and driven to the obscure places and times where vice operated. But the music that gained in public approval and became widely used was that which refined and irradiated the various sexual passions and sentiments that underlie the foundation of the family union.

Music of work hardly survives to-day; but there exist many evidences that it was once widespread. Sailors' chanteys, rowers' songs, harvest hymns, spinning songs, marching hymns, and many others, testify that men and women, working in groups, long lightened the tedium of toil, stimulated one another, and probably developed means of concerted action, through music. Not a few sympathetic observers of modern large-scale work in mine, factory, and lumber camp have wished for a revival of common song to lighten the long hours.

Music of diversion or social entertainment seems always to have been an important element in fellowship groups. The mother's lullabies to her children; the recitals or musical tales told or sung around firesides; drinking songs; school and memorial songs of assemblages; and numberless forms of instrumental music—all must be included in the categories of music for diversion or recreation.

An unquestionable by-product of diversional music is the socialization

of the participants. Participation as hearers, and very certainly in far greater degree participation as common singers or players, tends to lessen various forms of social antagonism or friction—differences of rank or race, dissensions, rivalries, and the like. Conversely, such participation promotes social solidarity and morale. It is perception of these social advantages that inspires the promoters of "community music."

PROBLEMS OF MARTIAL AND RELIGIOUS MUSIC

1. Music—of certain kinds—is very much in demand in the United States. No particular training of tastes for popular music seems necessary, any more than do young people need to be educated to like honey or fruit. But the musically educated often consider these "natural" or "environmentally sophisticated" desires inferior, if not vulgar.

Here, obviously, are involved certain important problems of values. What are the "values" of music to individuals? To social groups? What are the differences in real social values between "popular" or "common" music, and that which appeals to musically educated people as good or valuable music?

2. Assume that America were steadily being forced into war with another very powerful nation; that on both sides inventors were busy devising new means of destruction; that everywhere producers of steel, explosives, ships, wheat, army clothing, hospital supplies, and camp recreations for soldiers, were working to their utmost; that conscription of all able-bodied workers had been legislated; and that presently a great loan was to be floated. Should we probably develop much patriotic singing and band performance? Should we probably see composed many new patriotic songs? Would old patriotic songs probably be revived? If a great wave of interest in martial music developed, would its chief value be its enabling all to give expression to their feelings, or so to stimulate the combatants that they would fight with redoubled vigor?

3. This thesis is submitted. Martial music has served very important functions in past warfare—when men went into combat and were sustained in it largely by deep emotions of anger, hatred, love of country, longing for peace, and the like, and when war involved relatively close contacts of the combatants. But under modern conditions of warfare music ceases to have more than a minor rôle, and that chiefly confined, on the one hand to emotional expression for the populace, and on the other to recreational relief for the soldier or other endangered worker. In proportion as war becomes scientific and, to the individual soldiers, rela-

tively impersonal, music will count for relatively less as a social means toward its success for either party.

4. Assume an intensive movement to increase and extend a great religious faith among fairly well educated Americans. What kinds of music would probably be employed, and for what specific purposes?

It is submitted that, whilst the ultimate foundations of religion must always involve sentiments and emotions of the profounder kinds, the progressive rationalizing of the incentives, means, and concrete interpretations of religious appeal makes utilization of the ordinary emotions and sentiments increasingly difficult. Under these conditions, music as a social force in religious conversion, and in making tangible appeals to such sentiments as remorse, conviction of sin, reverence for deity, and the like, has a diminishing function.

MISCELLANEOUS PROBLEMS OF OBJECTIVES

1. What is commonly meant by "music" as a school subject? Does it include training in individual vocal rendition? The playing of instruments? Chorus and "community" singing? Sight reading of musical notation? Appreciation of good music?

2. What seems to be the prevalent public opinion on the part of well informed citizens as to advisability of using public funds to "teach" music? In such opinion, should all pupils be taught to sing? To read musical notation? To play the piano? The violin? Band instruments? To "appreciate" good music? Why?

Or, beyond the lowest grades, should only the more talented or interested be taught these things? Why?

3. What is the social situation as regards musical powers and interests in America to-day? Is much money spent on the provision of music—in homes, church, theater, hotel, public assemblage? On instruments, phonograph records, concerts? Is this music chiefly supported by relatively few music lovers, or by the majority of all our people? How does our total annual expenditure for music probably compare with that for public education? Is this popular interest chiefly in "good" or in "bad" or in simply "cheap" music? Does this music give "good" returns to our collective society? Distinguish in probable social efficacy the music now prevailingly available in homes, churches, dining places, parks, theaters, and political assemblages. Analyze somewhat specifically the contentions that "Americans are not a musical people"; that they are generous supporters of music; that their musical tastes are low.

4. What does sociology suggest as the fundamental social values of music? When society (as represented especially by the more thoughtful and influential in any social group) wishes more security, health, wealth, righteousness, knowledge, beauty, human fellowship, communion with God, racial growth, or other "goods," does it utilize music as a means? What kinds of music for specified purposes? Are these "values" realized chiefly through music rendered by the "expert" and heard by the multitude? Or through general rendition, even crude? What does history suggest as to specific uses of music to produce: courage for combat in warriors; devoutness in worshipers; fineness of sentiment between courting men and women; coöperation in hard work; mitigation of grief; smoothing out of social disharmonies, antagonisms, or aloofness; good fellowship of the imperfectly acquainted; conviction of sin? What special kinds of music have served these purposes? What is the situation in these respects to-day among more primitive peoples?

5. Does well informed opinion give a large place to music to-day as a means of promoting: property honesty; sex morality; religious devotion; courage in time of battle; coöperation in toil; resignation of the oppressed; elevation of the mating instincts; parental, fraternal, and filial devotions; refinement of the sensual nature; democratic fellowship? What kinds of music, and in what situations? What other means are frequently given precedence over music in realizing important "values" here?

6. Have the "values" of music in the past been largely individual —that is, satisfaction of individual cravings for beauty quite regardless of general social consequences? Is popular interest in music in America of the present chiefly inspired by desires for individual gratification? Does this interest determine character and vogues of "popular" music?

7. Is music at times antisocial in its consequences? Can it be used to promote sensuality, idleness, combativeness, hate, irreligion, selfishness? What kinds? Are the devotees—and especially the connoisseurs, amateur performers, and professional performers—of music usually more, or less, social or "virtuous" (in the larger sense) than other persons of equal intelligence and opportunity? Consider separately as regards: patriotism; property morality; domestic or sexual morality; industriousness; fellowship; religiousness; healthfulness.

8. What are differences of resulting "values" between "good" and "bad" music? How shall we "evaluate" *Home, Sweet Home;* the *Last Rose of Summer; Jesus, Lover of My Soul; Tenting on the Old Camp Ground;*

Foster's compositions? The popular gospel hymns? So-called "negro melodies"? The *Marseillaise?* What are the "criteria" of "good" music? Do these include: its popular or "democratic" appeal? Its power of producing "social results"? Are musicians the best judges of the kinds of music that should be promoted at public expense? What is the evidence?

9. How are we to explain the seeming facts that: America has produced almost no first-rate composers; that the Great War produced almost no enduring new songs in English; that congregational singing is maintained with great difficulty by churches; that "community singing" thrives only under leaders of extraordinary magnetism; that enormous sums are spent for the music of the phonograph and for that supplementing moving-picture exhibitions?

10. Only in the light of at least tentatively accepted answers to the above questions can we finally answer these questions: Why should public funds be employed in the teaching of music? What specific objectives of *powers* should control in such teaching? Why? What specific standards of *taste* or *appreciation* should control? Why? To whom should we devote the major portion of our effort and resources? Why? At what ages should results be chiefly sought? How "smooth out" the fads and individualistic procedures of a teaching field that is exceptionally productive of individualism?

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CHAPTER XXIV

THE PRACTICAL ARTS

INTERPRETATIONS OF EXPERIENCE

THE childhood of each one of us constitutes a rich mine, when properly considered, of the experiences that should guide us in providing education in all those regions where school and non-school agencies blend with one another—physical play, oral speech, manners, "small-group" ideals, and participation in practical arts.

Nature gives us not only strong instincts to play, as that is commonly defined, but hardly less strong instincts to imitate the purposive activities of elders. The sight of a man working with a hammer, knife, hose, gun, automobile, paint brush, or spade, causes the boy from four to fourteen to want to "try his hand." The normal girl wishes to imitate the cooking, dressing, child care, and teaching activities of her elders.

In the childish years before ten or twelve such imitations are apt to be sporadic and fragmentary. Perhaps we should say the imitative activity is an end in itself—the outcome or product is secondary and incidental. But in early adolescence it is certainly true that most normal natures are no longer satisfied with mere activity—they want product. Little children can be satisfied with mud pies; but older ones wish to center their efforts in pies that will be eaten—and with praise for the maker. Small boys can be satisfied with make-believe guns or wagons or hoes; the older ones want "practicable" tools which will give valuable product.

A fairly primitive home, farm, harbor, workshop, or "store" environment gives a large amount of scope for youthful participations in the activities of elders; but when home or farm or other agency becomes highly organized, and especially when residence and work become "urbanized," then tools disappear largely from the ken of children. Power-driven machinery is too dangerous, destructible, or complex for youthful hands. Hence come the problems of offering practical arts in schools.

1. Recall various opportunities for "practical arts" participation given you by your environment: (*a*) before ten years of age; (*b*) from ten to thirteen; (*c*) after thirteen. Separately consider: cooking; hunting; tillage; fishing; freighting (or transport, or portering); house repair or upkeep; bedmaking; room care; gardening; and others.

2. What were the contributions of your schools, either in opportunities or proficiencies, for these?

3. What, as you recall, were the "deprivations" in practical arts experience

inflicted on your youth? How would scouting have helped? Richer school facilities?

4. What cases have you observed where practical arts experience, either in school or elsewhere, has helped in "vocation finding"? Have you known cases where school manual training was definitely "pre-vocational" to a vocation later followed?

5. Should hunting, typewriting, and errand running be regarded as "practical arts" just as much as cooking, cabinetmaking, sewing, and electrical work?

6. In your experience, what are characteristic manipulative interests shown by individuals: (*a*) under the ages of six years; (*b*) between the ages of six and ten; (*c*) between the ages of ten and fifteen; (*d*) between sixteen and twenty-five?

At what ages do amateur manipulative interests include considerable desires to make a "serviceable product" such as: useful furniture; meals that may be eaten; dresses that may be worn; garden products that may be consumed; fish and game that may contribute to the larder; typewriting that will be read; etc. From the standpoint of productivity, what are the characteristics of amateur productive interests throughout mature life?

7. Is it probably correct to assume that boys and girls between the ages of eleven or twelve at the lowest and sixteen and seventeen at the highest have reached the highest point in development of those interests which combine qualities of play and desires for productive achievement of a socially useful nature? For what reasons may it be important that city boys from twelve to sixteen should have abundant opportunities to perform various kinds of work with tools and materials largely employed in the productive occupations of men? Discuss in terms of carpentry, printing, gardening, live-stock raising, hunting, fishing, wireless telegraphy, automobile driving, boatmaking, typewriting, selling, foundry work, house painting, etc.

It is sometimes urged that these activities are important for pre-vocational reasons. Suggest limitations to these, for example, in case of boys of more than average ability in a suburban high school, prosperous parents, and every prospect of entering college. Can house carpentry, hunting, printing, or foundry work be regarded as pre-vocational for these boys? Given boys in urban homes, of pronounced mechanical interests, of average or less than average mentality—would carpentry probably be pre-vocational for these?

8. In some cities the "handyman" ideal (that is, of the man possessed of various minor skills to be employed outside of vocation in adult life) is intended to control in amateur practical arts education. List various forms of skill more or less useful to adult householders in village or small urban communities where separate houses prevail. Consider separately printing, painting, varnishing, minor plumbing, minor electrical work, minor gas-engine work, bookbinding, machine woodwork, concrete work.

It is urged by some that the primary efforts of amateur practical arts should be simply "developmental" experience. Justify under this head such subjects as wireless telegraphy, hunting, concrete work, machine working of iron and steel, bookbinding, gardening, camp cooking, etc. Examine the list of badge activities of the *Boy Scout Manual* with a view to determining which of these are, in your estimation, "developmental."

PRACTICAL ARTS IN SCHOOLS

Practical arts as a school subject is best defined to include all manipulative activities based on, or derived from the productive work of adults, and which are employed in schools primarily for purposes of education. Thus gardening, cooking, typewriting, furniture-making, road-making, bookbinding, wireless operating, and hundreds of other projects, are used, or can be devised, to give valuable experience and insight to children from six to sixteen years of age. Many of these will have interest for these children because they simulate or even imitate the productive activities carried on by elders.

All the economically productive activities of primitive men (including defense), as well as a large proportion of those of civilized men, first appear as useful *arts*—that is, as elaborated processes in which applied science plays a small or secondary part, but in which trial-and-error methods have given a great variety and amount of useful customs which are passed on from elders to youngers largely by imitation. Thus hunting, fishing, planting, harvesting, milking, butter making, building, mining, irrigating, transporting, fabric making, cooking, furniture making, metal working, and the other divisions of economic activity, give literally hundreds of examples of useful arts (as distinguished from the fine or esthetic arts) which growing youth is instinctively desirous of imitating. But when any field of economic practice comes to rest largely on *applied science,* it is not certain that the imitative impulses of youth either do, or should be expected to, respond as they do toward the more primitive forms of productive activities.

Children growing up in a primitive environment find abundant opportunities in their household and neighborhood environments to exercise instincts of manipulative construction. In such an environment of unspecialized economic activities, children are given access, first in the play spirit, and then as helpers, to a wide range of manipulative experiences. Americans can readily picture such a situation on any frontier farm. Here, boys, beginning as early as six or seven years of age, take

part in hunting, fishing, herding, woodcutting, driving, planting, clearing, butchering, harvesting, building, cooking, and scores of other occupations. All the tools used by adults, from guns and axes to mowing machines and automobiles, are not only visible and accessible to the growing boy, but frequent opportunities come, very early, for him to try his hand in their use. Soon this voluntary and eager use is supplemented by enforced use in chores and prescribed routines.

In the modern economic environment, whether of the city or the well ordered farm, these opportunities for youthful participation in economic activities, in a spirit that is partly of childhood and partly of manhood, are progressively shorn away. The boy in the suburb, as well as the boy on a prosperous prairie farm, is not much needed as a helper in the economic activities being carried on around him. He can hardly be permitted to touch the costly and formidable tools which skilled men use. If he is to get experience of the kind he craves, he must get it through amateur activities largely divorced from the productive work by which he is surrounded.

OBJECTIVES OF PRACTICAL ARTS

Practical arts for schools can best be defined as any creative or constructive activities which in large part imitate or reproduce the economic productive activities of contemporary men and women. These would therefore include hunting, tillage, livestock, trade, household, commercial, and factory projects. The definition excludes those activities which imitate only historic activities—fighting or hunting with bows and arrows, fire-making by friction, grain-grinding by hand, or spinning—and all those followed primarily by adults for play—dancing, card-playing, and those activities properly called sports (though it includes school work in making the implements of sports). It should also exclude all those activities imitative of adult productive activities in which it is virtually impossible for the youth to produce a thing of any utility—writing an essay, painting a picture, inventing a machine, laying out a city, and the like.

The dominant spirit found in true practical arts work should clearly be neither purely vocational at one extreme nor irresponsible mud-pie play at the other. The actual spirit is most nearly designated by the word "amateur"—as in the amateur hunter, fisherman, gardener, woodcutter, stock breeder, photographer, bookbinder, wireless operator, poet, house-builder, cook, salesman, lacemaker, stamp-collector, taxidermist, explorer,

scout. The amateur is not wholly actuated by ideals of useful product; but there must be some product to satisfy. But the work must offer a measure of "satisfaction" in itself—something frequently missing from vocational activities.

The controlling primary purpose in practical arts programs may be sought in any one of several directions (note that one primary purpose must always determine choice of ways and means, whilst many secondary or incidental purposes can be served more or less as accompaniments). The primary purpose may shift from one field to another for different age levels or other differing conditions.

Given: One hundred boys, ages twelve to thirteen, in the seventh grade of a large junior high school, who will probably leave school between fourteen and sixteen and become juvenile workers in a great variety of commercial and factory vocations. They are only fair in academic studies, but have active mechanical and sporting interests, which their apartment-house urban environment does but little to satisfy. Their school can offer up to two hours daily of practical arts projects in grades 7 and 8.

Any one of these purposes could control in determinination of specific objectives:

1. Vocational preparatory, or pre-vocational, in which each pupil, having chosen a general line,—commercial, printing, mechanical shop, gardening,—would be trained in the simpler manipulative and technical phases of some vocation within that field.

2. Vocation finding or guidance, in which the learner would "sample" a number of trades or departments of work with a view to discovering his own interests, or revealing his aptitudes.

3. Providing realistic centers of correlation for certain more abstract studies, such as arithmetic, drawing, English composition, and even geography.

4. Training the learner in the various "self-service," "handy man," or "vocational minor" activities that fall in greater or less degree to all, and especially to home-owners—including minor repairs of furniture, doors, stoves, plumbing, automobiles, clothes, as well as some simpler constructive work in gardening, painting and varnishing, cooking, furniture making, etc.

5. Using practical arts projects as means of training in buying and utilizing appreciations and standards—furniture, foods, bookbindings, jewelry, typography, tools, etc.

6. Using practical arts projects as means of general development in experience, growth, appreciation, etc., quite without reference to any other

practical outcomes—thus paralleling sports at their best, and catering directly to amateur interests.

Primary aims in practical arts will greatly affect methods. Obviously, purposes 1 and 2 would restrict offerings to fields in which future vocations would probably be found, and methods probably should be rigorous and realistic, expressing the vocational rather than the amateur spirit. Purpose 3 is a vague one as yet in these grades, where further learning in such subjects as arithmetic and English language demands a considerable degree of specialization of objectives. Purposes 4 and 5 should restrict projects to those likely to prove serviceable. Purpose 6 throws the field wide open obviously, and permits very great flexibility, both as to projects and as to methods.

These general considerations are probably valid:

1. Amateur constructive or practical arts interests are at their zenith normally between twelve and fourteen. Later they tend to be replaced by vocational interests, if economic need is keenly perceived. Purely play interests suffice in earlier years.

2. Only a few persons have genuine vocational interests between twelve and fourteen or earlier. Only a small number of pupils are so situated as to need vocation finding in these years.

3. Any considerable enforcement of "handyman" workmanship standards in these years would probably kill interest in the subject. The same result would probably follow exacting use of projects as correlation centers.

4. True practical arts projects diminish in practicability as we descend in grades. Mimic or toy projects largely satisfy in the first three years—dolls, mimic houses, sand representations, paper construction, plastic representation, block printing, toy weaving, mimic trains, toy pistols, etc.—hence these can be adapted to service as centers of correlation, as more nearly productive projects for higher grades can not.

5. If "developmental" objectives control in practical arts from twelve to fourteen or even sixteen, there can be found no good reasons for: uniform prescriptions of specific types of work for all; prescription of either minimum time or of minimum standards of achievement in particular projects, or exclusion of straight imitation of models as one valuable method of learning.

6. All good practical arts work should center in projects as the basis of organization and method. But around each project should center much vivid reading and, where practicable, picture materials, and visitation, whilst various models or "constructs" by others should be available.

Projects should be outlined in detailed "guide pamphlets" for self-help in learning.

Practical arts in rural schools present certain distinctive problems, since:

1. The environments of these pupils permit (and sometimes enforce) a large range of imitative and minor vocational manipulative activities from eight to fourteen years of age—burden carrying, spading, woodchopping, nut gathering, game shooting, harnessing, nailing, hay pitching, cattle driving, transplanting, weeding, cooking, butter churning, pumping, stable cleansing, and numberless other choring activities, some by boys and some by girls. Many of the detailed arts thus learned, often under compulsion, function vocationally later.

2. What, for urban dwellers and other followers of specialized vocations, become "handyman" arts, are for the farm man or woman simply phases of vocation, taking time denied to other work because of weather, etc. Thus woodchopping, ditching, wall building, various forms of repair, poultry and garden raising, shoe repair, and the like, should be taught as parts of vocations of farming and home-making—farm mechanics, home mechanics, etc., at suitable ages from fifteen onward.

Developmental practical arts for rural boys from eleven to fourteen or fifteen could, obviously, include projects from: printing, photography, telegraphy, bookbinding, jewelry making, wireless, furniture making, and other "urban" arts. Are these desirable or permissible?

Or the subject could center in: gardening, automobile repair, house repair, small animal husbandry, piping of water supply, window screening, clothes pressing, road making. What purposes should control? Practical arts can take one out into the big world, or hold him back in his own yard. Which is to be preferred? Would a normal fourteen-year-old on a farm prefer to rig up a pump to supply the house, or set up a wireless apparatus? Which would be more educative? Educative for what purposes?

Rural environments offer extra-school facilities for certain kinds of practical arts that are not paralleled in urban environments,—at least, for boys,—land, animals, vehicles, tools, wood, water, etc. Also standards of execution exacted in painting, fencing, and many others are within powers of boys from ten to sixteen years of age.

RANGE OF PRACTICAL ARTS

The principal sources of practical arts projects suitable for use in schools can conveniently be classified as follows:

1. Agricultural arts: home gardening; treeplanting and nursing; poultry raising; food packing; "corn club" work; pig clubs; milking; butter and cheese making; fruit drying; farm products marketing; farm mechanics; etc.

2. Industrial arts: cloth weaving; house repair and building; house painting; installation of screens, drainage, water supply, electric bells, electric lighting, central heating; machine dissection and reassembly (sewing machines, guns, lawn mowers, stoves, pumps, bicycles, motors, optical instruments, vacuum cleaners, washing machines, lathes, etc.); bookbinding; printing; photography; wall papering and decoration; fabrication of playground apparatus; furniture making; tool sharpening; wall building; road construction; boat building; photo mounting; engraving; mechanical draughting; pottery and glass making; shoe repairing; tailoring and clothing repair; and scores of others.

3. Commercial arts: typewriting; business penmanship, arithmetic, documents, English; display advertising; selling; bookkeeping; package making; comptometer; filing; banking; telegraphy; dictaphone, etc.

4. Household arts: kitchen cooking; camp cooking, food cooking, food buying, food serving; house planning; toy house construction; home (or room) decoration; furniture choosing, distribution, upkeep; bedmaking; repair (or upkeep) of apparatus for plumbing, heating, lighting, cleaning, ventilating, screening, sewing, cooking; infant nursing (feeding, cleaning, dressing, exercising); sick nursing; decorative window and yard gardening; clothing buying, making, repairing; accounting; entertaining; festivals; and many others.

5. Nautical arts: fishing; fish planting; boatmaking; boat sailing; etc.

INDUSTRIAL ARTS OFFERINGS

In a certain large urban junior high school are regularly to be found some two hundred boys, from twelve to sixteen years of age, of whom these facts are substantially true: they are from artisan class urban environment, and range from slightly above average to inferior abilities; very few of them will remain in school after fifteen years of age; most of them will become manual workers in various fields; few of them now have more than meager opportunities to get practical arts experience, though nearly all have fairly strong mechanical interests; 60 per cent. are in the seventh and eighth grades, the rest scattered through grades 3 to 6—these retarded ones having their special classes in the junior high school,

where they are expected to fit into classes of advanced boys in practical arts.

Recommendations for practical arts for these boys are submitted as follows:

1. Provide a large shop room—with a thousand square feet or more of floor space, including booths for exhibits.

2. Install one unit of equipment for each of such industrial arts activities as hand cabinetmaking, forging, photography, job printing, electric bell installation, bicycle repair, tool grinding, and a score of others, as available. Back of each unit equipment have illustrated reading matter—books for amateurs, catalogues, and the like. Keep exhibits of successful examples of work—to be copied, if desired.

3. All work is arranged on project basis; and for each project there is a booklet, or set of guide sheets, to be followed by the pupil after he has elected a project and had his choice approved by the instructor.

4. Once a boy elects a project, he must see it through in good amateur spirit or get out of the shop. But when he has completed a project in one field, there is no reason why he should not elect his next project in a quite unrelated field.

5. If the school has a "long" school day—seven or eight hours—there is no reason why boys should not be permitted to give two hours a day to this shop—always provided they are working onward and upward in the true amateur spirit.

HOUSEHOLD ARTS OFFERINGS

Should we teach household arts in junior high schools? Should we require it of all girls, or leave it as a free elective? Should it be given about 10 per cent., or preferably 30 per cent., of school time? Should we make it an exacting and strenuous, or an amateur and playlike, subject? Should we especially emphasize practical skills, or technical knowledge, or ideals and appreciations?

But there remain more fundamental questions. What do we mean specifically by household arts? What are its values—cultural, healthful, civic, vocational—to girls of junior high school ages? What are the other values,—in arithmetic, English language, music, hygiene, general science, history, geography,—all of more or less importance, that must be sought, on behalf of these girls, through their schooling? Are all junior high school girls substantially alike as to their abilities, interests, prospects, and

needs? What relationship can household arts be made to bear toward self-service in personal hygiene, thrift, right living, life guidance; toward the vocation of assistant home-maker, as daughter or domestic; or toward full responsibility home-maker, as wife and mother, or, occasionally, as wage-earning housekeeper? None of these questions are as yet adequately answered in the technical literature of education. We can, however, obtain some light on them by applying to their study certain devices of sociological analysis.

Let us assume the existence of a junior high school of fifteen hundred pupils, receiving only seventh and eighth grades, besides all pupils of lower grades who are over twelve years of age. We will think of this as an amply equipped and staffed school, serving a prosperous American city of fifty thousand population.

This school contains the children of prosperous, comfortable, and poor parents—some recent immigrants, the majority of white "native stock." Nearly all the girls over twelve and under fourteen or fifteen are here—the superaverage, the average, and the subaverage in intelligence. Some will eventually go through college, some will leave to go to work just after their fourteenth birthday. Four fifths of the girls will be "gainfully employed" for a few years after leaving school. Ninety per cent. of those of lower economic station, and 70 per cent. of those of higher economic station, will marry before twenty-five. Of those who marry, perhaps half, by any reasonable standards, will become good, but not best, home-makers by virtue of "pick-up" and "trial-and-error" methods, even if the schools teach nothing resembling household arts. Perhaps half will fall short of being even average home-makers if left to home training and pick-up methods.

The seven hundred and fifty girls of this school are, obviously, a diversified crowd—diversified as respects abilities, environments, interests, prospects. It is part of the business of the junior high school, part of the integrating function of education, to smooth out some of these diversities, but possibly it should accentuate others, on the principle of "to them that hath shall be given." Let us diagnose certain social case groups.

In Case-Group Q are nearly one hundred girls of whom the following facts are substantially true: they come from prosperous or comfortable homes; they are above the average in intelligence, mentality, or ability, however named; they will almost certainly go through high school, and many will go to normal school or college; their homes give them little mastery of the executive or "doing" side of home crafts, but do give them a large stock of appreciations of good dress, good food, clean

rooms, social behavior, and orderly households. From their homes, too, they get a goodly stock of habits, and some ideals, of hygienic and sanitary practices. They have now little feeling of responsibility for the home, or vital interest in their own later home life. They dearly love "good times," and they take comfortable homes for granted, as they take air and city water. It may be a reasonable expectation that, as women, they will have none too good health, either as gainful workers or as home-makers. Their ambitions will tend to outrun their physical and financial powers, and not a few of them will deliberately evade the serious responsibilities of home-making and family life from social selfishness or under the mistaken assumption that other things are more important. Some will in mature years become civic workers of a high order.

Case-Group R consists of the daughters of prosperous families, but afflicted with less than average intelligence. Their parents will probably keep them in schools, of one kind or another, until they are eighteen, or even twenty years of age, but they can not graduate from high schools. Not a few of these will be selfish, self-indulgent, extravagant, foolish. Some will find work in clerical positions or salesmanship; and some will remain as dependents. A large proportion will marry, and their home-making will be variable.

Case-Group S consists of one hundred girls of less than average ability from the poorer homes of the city. Few of these girls will remain in school after the period of compulsory school attendance comes to an end. They will seek wage-earning work in factories, ten-cent stores, and restaurants. All but a few will have married by twenty-four, mostly to artisans, railway workers, or clerks on inferior wages. Their homes will be cramped, and, as children increase, their lives will tend to become more dingy, a bit sordid, and lacking in serenity, at least, as judged by standards of social workers.

Case-Group T consists of at least fifty girls of superior or higher intelligence from low economic surroundings. These will move rapidly through to the high school, where many will take stenography, and a few will prepare to teach. They must become at least self-supporting by sixteen or eighteen, and may even be called upon to help support their families. Not a few will tend to overwork their none too strong bodies. They will become ambitious to marry above their fathers' station, and a considerable proportion, not finding just what they want in husbands, will prefer celibacy with its independence and higher standards of dress and amusements.

While these case-groups will in actual practice more or less blend into

each other, it is practicable, nevertheless, to consider them separately for the purposes of curriculum making, and, in as large a school as that here postulated, it would be easily and economically practicable, by elective or alternative studies, to vary the programs of the different groups, in so far as parents and teachers might agree upon differences of abilities and needs.

No strictly home-making vocational education, in the sense of training, is practicable or desirable during this under-fourteen period. The girls who go to work at, or soon after, fourteen will usually enter specialized vocations for which a few weeks of specific training, apart from the junior high school, would give all the preparation practicable at this age. But it ought to be expected that at seventeen or nineteen or twenty-two many of these girls could and, given facilities, will "come back" to specific vocational "upgrading" schools for adjustment to adult vocations. A few hours, probably thirty, or sixty at most, might well be devoted to vocational guidance during the six months next preceding departure from the junior high school.

Let us assume that in this junior high school: (*a*) no household arts is prescribed for all pupils; (*b*) all girls are required to take a course each year (equal to sixty clock hours) of hygiene, plus needed physical training; and (*c*) each girl is given opportunity to elect, as alternative to other courses, one or two household arts courses from the three that are offered, as described below.

What household arts or related courses might such a school offer? The following at least are theoretically feasible:

1. **Two "Home Self-Service" courses,** A for seventh grade and retarded girls, and B for eighth grade, ninety hours each, designed especially to teach wage-earning girls or those who are later to become college girls to care for their own health, finances, apparel, associations, and general living conditions. They emphasize instruction in such technical matters as food values, wholesome recreation, and rest; and training in short units of clothing upkeep and renovation, laundry, and possibly light food preparation, to which is added instruction in right buying, simple personal accounts, and possibly social recreation. Some of the powers and appreciations thus acquired will obviously carry over in part into later home-making. But it is a mistake to call this work "home-making," since the essence of true home-making is service to others, and only incidentally to one's self. Besides, this is not the age at which we may expect motives (except amateur) for home-making to be active, except in rare cases;

whereas a substantial proportion of the girls, especially from poorer homes, may have very genuine motives for "home self-service."

2. **Two courses, C and D, "Household Arts for Amateurs,"** maximum of one hundred and eighty hours each year, would use the scouting spirit, involve little drudgery, and many attractive projects, accompanied by much alluring reading about homes, foods, children, parties, house care, nursing, home gardening, pets. These should be general cultural courses, designed to enrich experience first of all, but secondarily to give appreciations of homes, home-making, and modern scientific and artistic achievements in domestic fields. Where coöperation of homes could be secured, projects—meal preparation, cake making, child care, room care, furniture renovation, laundry, garden, dressmaking, entertainment—would be developed from the school, approved by the mother, and executed by one or a group of pupils under supervision of the teacher. Not only should not such courses be required of all, but no particular projects or readings should be required of all alike. The utmost flexibility should prevail. Pupils failing to take hold properly should simply be asked to withdraw, at least for a time, since they disturb the proper voluntary spirit.

3. **A "Technical Home-Making" course, E,** one hundred and eighty hours, four hours a week for one year, but open to mature girls of seventh or lower grades, as well as eighth-grade girls. A course as rigorous in its methods as arithmetic, based upon careful study of a central textbook, supplemented by laboratory practice, and calculated to give a store of knowledge, and some ideals, rather than skills. Such a course should give much information about modern advances in home-making—buying, food values, child health, use of power-driven appliances (not overlooking that American urban homes have generally achieved two, at least, of the greatest labor-saving devices ever invented—piped water supply and piped sewage disposal), art in domestic life, the deeper social significance of home and family life. It is the writer's belief that such a course as this would appeal to fifteen or twenty per cent. of girls, especially the more imaginative and ambitious, and would give them at least as much profit as their grammar and arithmetic do now, and more than will the later physics and foreign language. Such a course should never be a required course. In a small school, however, administrative limitations in respect to alternatives might make it, if the one chosen to be offered, in effect required, but that is due to poverty of opportunity, not educational need.

Let us assume our school equipped with a good advisory service. What

courses would these advisors recommend to the girls most nearly representing the various case-groups?

For Case-Group R they would recommend courses C and D—Household Arts for Amateurs. They would do this in the expectation that these girls have yet several years to spend in schools, and are virtually certain to study some kind of "hard" home economics later. Furthermore, it is important that these girls of meager endowment, but favoring environment, be stimulated along lines of high-grade practical arts activities to offset the discouragements they experience from failures in abstract studies.

For Case-Group S would be recommended Home Self-Service Courses A and B, on the assumptions: (1) that these girls, because of their environment, have much to learn as to care of health, earnings, characters; (2) that, going soon into wage-earning work, they will cease to be interested in the executive side of home-making, although as boarders and in self-supporting capacities they may be expected to develop a wide variety of tastes and appreciations of good, fashionable, and perhaps costly things; (3) that if society is wise it will offer very concentrated and practical full-time courses in home-making (eight hours daily for perhaps three months, and based chiefly on the out-project method—productive projects away from homes—and preferably not in the girl's own home) at ages 20 to 25, perhaps just preceding marriage, supplemented by very practical afternoon extension courses for them after they begin home-making.

For Case-Groups Q and T recommendations would vary according to individuals. But, given the opportunity of electing Course E as an alternative to an advanced course in arithmetic, or a foreign language, or English grammar, it is certain that many of these bright girls would take the "hard" technical Course E, especially as it is not certain that, with their ambitions, they can or will pause for similar work later in school or college. Many of these girls will become intellectual leaders. From some of them will come future teachers of home economics. If they are to be saved, in a physical sense, from themselves, they should early acquire better perspectives as to health values, maternity values, and sound home social values than are now acquired by our ambitious, conscientious, energetic middle-class daughters. They may be expected to control their future environments and conditions more on the basis of "reason and science" than on the basis of faiths and skills.

But none of the courses should be closed to girls from any case-group, except for two reasons: (*a*) they need the time for other studies more essential to their purposes, if these are defined, or to "make up"

deficiencies; and (*b*) after entering a course they fail to develop the proper spirit, important to all courses, or the required ability (a warrantable exclusion only from Course E). On the other hand, there is no reason why any girl should be required to take any of the courses named if the school is large and rich enough to offer useful alternative courses.

FOR SUPPLEMENTAL READINGS AND REPORTS

BONSER, F. G. *The Elementary School Curriculum* (Ch. 9, The Practical Arts).

DOPP, K. E. *The Place of Industries in Elementary Education.*

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CHAPTER XXV

VOCATIONAL GUIDANCE

INTERPRETATIONS OF EXPERIENCE

IN a simple social order where production centers largely in the household group, it is natural for boys maturing to the point where they must assume vocational responsibilities to imitate, and to follow after, their fathers. Similarly, girls imitate the vocations of their mothers.

Where armies, or commerce, or proselytizing religions weave their strands across the social fabric, increasing proportions of boys desert the homestead and village. Some guilds—and, of course, most of all a celibate priesthood—long recruited their novices outside their own ranks. The discovery of new continents for exploration and settlement greatly disrupted the old settled order. In a New World of opportunity it becomes the approved thing for boys and girls to aspire to higher stations than those occupied by their parents.

The modern professions, industries, and commerce—and increasingly agriculture—subdivide and specialize until each of their specialties is "most worth while" only to a very limited range of general ability and special talent; while to any one of them only relatively few persons are adapted in "optimum degree." The modern city opens to young workers a bewildering maze of vocational opportunities. For the novice many of these are invitingly simple and easy—and they pay well for beginners. But they may be apples of Sodom from the standpoint of promotion in responsibility or pay.

Nearly all workers in this maze are pathetically in need of guidance. But that need is especially acute in the apprentice and journeyman years from fifteen to twenty-five. Social economists are agreed that losses through vocational misfitting are now very great, and frequently terribly tragic. The reader's own experience will show this in part:

1. Through what means have certain adults, known to you, and now successfully settled in their vocations, "found themselves"? Give separate consideration to: influence of parents; influence of local available opportunities; influence of associates other than teachers; influence of teachers and schools; accidental combinations of circumstances.

In a modern large city, what seem to you to be the most wasteful factors in the ultimate selection of vocations? To what extent does it appear to you that among the adult workers in the following vocations there are now many misfits (a poor performer in a vocation is not necessarily a misfit—he is so

only when he could have done better in another): the medical profession; elementary-school teaching; clerical work in banks; farming; missionary service; factory-specialist operatives?

What seem to you the relative needs of vocational guidance as between: large city and small town; countryside and medium-sized city; highly talented and poorly talented youth; youth of prosperous circumstances and those from poor homes; boys and girls; persons aged eighteen and others aged thirty?

2. Analyze the vocational stages by which certain men and women now from forty to sixty years of age have passed the intervening years since the age of fourteen, having in mind particular: professional men; business leaders; small owning farmers; factory operatives; unskilled miscellaneous workers. Is it prevailingly true that modern economic organization opens up a large variety of vocations that are essentially juvenile—that is, that are very well fitted for young workers, but almost wholly unsuited to mature workers? It was formerly said that young untrained workers must perforce enter "blind-alley" or "dead-end" occupations; would it not be more correct to say that nearly all lines of work open to immature persons in industry and commerce are of this character and therefore that they should be described without prejudice? What seem to you to be some noteworthy exceptions? Outside of the professions and a half-dozen trades, what are the vocations known to you upon which one may enter as practitioner or student at fifteen or sixteen years of age and continue an unbroken ascent during a long number of years? Consider from this standpoint the great majority of workers in: miscellaneous farming; clerical occupations; factory occupations; railroading and other forms of transportation; mining; politics; and various forms of business leadership.

3. In a certain junior high school more than 20 per cent. of the boys are substantially included within the following description: they come from prosperous homes; they are of considerably more than average native ability; they are very social and fond of sports; they live in a city in the Northern Mississippi Valley; they are healthy and of good moral character. What are the probabilities that any one of these, or at least any considerable number, will become: coal-mining operatives; vagrants; unskilled factory workers? What are probabilities that any considerable number of them will enter professions? Will enter business on lower rungs of ladder and work toward higher positions? Will become owning farmers?

In a similar school are found one hundred girls to whom the following description substantially applies at thirteen years of age: they come from relatively poor, recent immigrant families; they are of less than average native ability; their homes are in a large commercial city; they are keenly interested in dress and amusements, and but slightly in intellectual pursuits. What proportions of these will probably spend the years between sixteen and

twenty in minor factory and clerical pursuits? What proportion will eventually enter professions? What are the probabilities that any will become business leaders? What proportion will probably be home-makers at thirty years of age?

Segregate four other case-groups coming within your experience with a view to showing how vocational guidance can be very considerably simplified by "processes of elimination"—of vocations from which they are barred by their abilities, lower or higher.

4. What kinds of useful vocational knowledge can be given to miscellaneous aggregates of pupils of the seventh, ninth, and eleventh grades, respectively, by means of lectures, guided readings, moving pictures, and other means applicable to mass education?

Contrast with this "informative guidance" the possibility of "diagnostic guidance" in which an expert in vocational guidance, and also in personal characteristics, studies in detail the qualities of an individual candidate with a view to making recommendations for subsequent practice of, or study of, a vocation. Compare possibilities of these two types of guidance with two types of health maintenance: (*a*) informative collective instruction in hygiene, and (*b*) individual diagnosis of particular defects of eyes or teeth, with application of specific remedies.

GUIDANCE

The need for guidance of the young and inexperienced becomes very acute in all complex social environments. Where many courses are open in school or college, the need for educational guidance is urgent. Where young workers are confronted by a variety of vocational opportunities, the demands of which for specific forms of native ability, skills, and technical knowledge are unknown, vocational guidance becomes an indispensable means of preventing discouragement and loss of time. Right kinds of cultural education should be looked upon, in part, as contributing guidance toward use of leisure and further development of cultural tastes and interests. Good civic education should serve as guidance in the choice of political parties and of the political activities to which the educated person should devote himself. Good vocational schools seek to guide their graduates toward the most profitable places and conditions for the practice of their vocations. Eventually we may expect more purposive guidance than family, church, and friends now give toward the right choice of a conjugal mate and the upbuilding of a family. Health guidance is now a function of certain insurance and other private agencies; and its rapid further evolution in the near future is practically assured. Invest-

ment guidance is obviously one of the crying needs of many mature persons in modern life.

The factors of effective guidance include two as widely separated as are purposes and methods in education. First, guidance presupposes organized knowledge of the concrete or objective vocations, studies, parties, or other potential goals among which the guided individual is expected to choose. Second, it assumes knowledge of the individual guided—his native powers and other qualities, his acquired characteristics, and the social conditions to which, by law, custom, or interest, he is committed.

The methods of guidance can be conveniently grouped under two heads:

(a) **Collective informative guidance** is designed to place at the disposal of interested persons in large numbers information as to the various opportunities open—in studies, vocations, places of residence, parties, investment opportunities, competent medical service, and the like. In a sense, every college catalogue, high-school bulletin of courses, "booster prospectus" for residence or investment, and popular book on hygiene is a means of such collective guidance. Private vocational schools issue advertisements pointing out the lucrative opportunities of certain vocations. In schools, young people's societies, and elsewhere, speakers frequently are selected to extol particular vocations, possibly to treat of several in such a comparative way that novitiates may be guided in their choices.

(b) **Individual diagnosis and recommendation** is the second fundamental method of guidance. In crude form, this takes place when students consult instructors as to choice of courses or curricula in schools having flexibility of offerings. Physicians are frequently called upon to diagnose and to make recommendations not merely as to immediate precautions to be taken for cure or health conservation, but even as to occupations that should not be followed, and places of residence that should be sought. Employment authorities, and especially employment agencies, frequently supplement their refusals to employ, or to recommend for employment in specific fields, by suggestions as to other openings toward which it is desirable that the applicant look.

VOCATIONAL GUIDANCE IN SCHOOLS

The objectives of vocational guidance in schools can conveniently be included under these heads: 1. First, the development, even in quite young children, of a substantial range of *appreciations* of the importance

in life of vocational success, the relative social usefulness or service of the various vocations, the importance and conditions of right selection, suitable preparation for, and proper advancement in, the several vocations, and the qualities called for in each. Much of this *appreciational* education can be effected through talks, readings, and other developmental methods as a part of *general* education—and, as suggested above, no serious harm, and probably much good, will result from its introduction on an elective basis as early as the grades of the junior high school, even in the case of those who will probably be able to secure the opportunities of professional education.

2. Second, the specific testing of the individual as to native powers, acquired powers, and interests, and the relation of these to the requirements and available opportunities presented by the various fields then open to him.

In crude customary forms these two kinds of vocational adjustment are very old. In the older and simpler social orders it is natural for the boy to follow in the footsteps of his father in choosing his vocation, or else to learn his trade from some neighbor craftsman to whom the boy is apprenticed. Modern civilization has largely destroyed these old simple procedures. The lure of the "New World" or of the "West" or of the "city" now tempts probably more than a majority of youths away from ancestral vocations and places of abode. Democracy and opportunity in America are often taken to mean that the boy must "do better" than his father has done. Not only with the younger generation, but among the elders themselves, is it often deemed somewhat disgraceful to follow the parental calling.

The work of the world has largely changed, too. Once almost any one could live on and from the soil; now only men of more than average managerial ability can hope to succeed as landowning or tenant farmers. Our factories, mines, and railroads have places for "unskilled" labor; but they have more places of excellent opportunity for numberless special varieties of native talent coupled with well assimilated training.

But in the great majority of fields of modern production the worker neither can nor should make a choice of vocation once for all. Specialization not only differentiates man's vocations into numberless vertical strands: it creates horizontal strata as well. Cities and villages now offer abundance of vocational opportunities to juvenile workers from fifteen to eighteen; but these juvenile vocations not only do not, as a rule, lead directly into higher stages, but they lead nowhere. Once we called them, in our economic ignorance, "dead-end" or "blind-alley" vocations—as if

mechanical specialization and power production could result in anything else. Even the vocations now followed by the majority of men and women from eighteen to twenty-two or more years of age do not constitute their final "life work." Especially during the premarriage years of both men and women, there is endless experimentation, shifting, "hiring and firing," and roving, of workers.

Out of these conditions emerges the modern need for vocational guidance. It is a twofold need—first, that the man seeking vocational adjustment shall know what are the opportunities to be found; and, second, what are his own potential powers to take advantage of these.

ECONOMIC AND SOCIAL ASPECTS OF VOCATIONAL GUIDANCE: SUMMARIZED

A. Vocational guidance is essentially of two kinds—informative and diagnostic.

a. The first includes imparting of information to individuals or groups about: varieties of work now available in the world; native and acquired qualities most suited to the performance of each type; idealization of right work attitudes, vocational advancement, etc. (Compare with school and class instruction in hygiene, idealization of health, and the like.) For these ends can be used: lectures, guided readings, various emotional appeals. Courses (not in too formal a sense) can be offered as electives to classes prevailingly from thirteen to fourteen years of age, fifteen to sixteen years of age, and at other age levels. Informative vocational guidance is properly a part of *general* education.

b. Diagnostic guidance includes expert examination of an individual with a view to definite recommendations, possibly prescriptions, as to: kinds of work he is now unfitted for; kinds of work he could not well prepare for; kinds of work for which, by virtue of native powers, acquired powers, economic resources, etc., he is now fitted; kinds of work to which, with proper education, he might become fitted. (Compare: expert diagnosis of oculist, physician, psychiatrist, with consequent prescriptions against or for certain kinds of action). Obviously, this form of guidance must be individual, and should be available as far as practicable: (*a*) when the individual is ready to take further education of vocational or pre-vocational nature; (*b*) when he is ready to seek employment; and (*c*) when he seeks to pass from juvenile or other earlier to later and higher stages of employment.

PROBLEMS OF OFFERINGS

1. Assuming the presence of an abundance of easily read books *about* vocations in the library of the junior high school, could best services be rendered

under (*a*) by having a departmental teacher give two hours a week to lectures and conferences centering around reading? What part could be played by visits to farms, factories, stores, etc.? Would it be advisable to have recitations? If the school is large, would it be advantageous to have a woman teacher of the subject for girls, and a man for boys? Could classes for this purpose well be as large as one hundred? Should pupils study anything here? What?

2. Under what conditions could a pupil be required to undergo examination under (*b*)? Where not required, what motives for electing such examination could be expected (specify probable circumstances, in: a college; high school, upper classes; with retarded pupils in grades).

B. The need of vocational guidance (to individuals) of a systematized kind under specialist school or employment auspices (informal vocational guidance under home and other agencies has always been available) increases partly, if social efficiency is to be realized, in proportion as:

a. The variety of occupations open to an individual increases.

b. The requirements of many of these vocations become technical and difficult.

c. Vocations are carried on in places invisible and inaccessible to growing youths

d. Apprenticeship, with its formal arrangements, selections, and responsibilities declines.

PROBLEMS OF INDIVIDUAL NEED

1. What are the occupations normally open and desirable in central North Dakota respectively to: a fifteen-year-old boy of good strength and manual ability and no strong intellectual interests; the same youth at twenty-one, assuming him to have worked meanwhile as a hired man at general farming; a girl at fifteen, of musical promise, poor parents, but girl and parents very ambitious; a farmer's daughter of good general scholastic ability, but poor health and great dislike of farm life; a boy of fifteen, of prosperous parents, with excellent health and mathematical abilities, very ambitious? Given a high school of one hundred pupils in Streeter, North Dakota, would you advise inclusion of vocational guidance among courses? What kinds? To what expected ends?

2. What are the occupations normally open and desirable in New York City to: the son of prosperous American parents, who has excellent ability in athletics, mathematics, and "society," is very ambitious, and promises to be of the "executive" type; the daughter of rich Jewish (recent immigrant) parents, artistic (plastic and graphic art) interests and some ability, poor scholarship in formal subjects, not good English speech, excellent health; the daughter of poor parents, strong in body, but low in grade and backward in

school work, and looking upon all work as a curse; the son of poor artisan parents, very keen mentally, eager for business success, but in poor health, and of irritable disposition? Given junior and senior high schools and evening schools in New York City, what would you recommend as to time and place of informative vocational guidance courses? Kinds of courses? Kinds and places of diagnostic work? For what purposes?

3. Examine relative needs of vocational guidance in: rural sections of central Texas; rural areas of Georgia (for colored population); Worcester, Massachusetts; Stockton, California—giving separate consideration to: girls of low or average abilities in poor families; boys of exceptional specific abilities in poor families; and other realistic case situations.

C. The need of systematized vocational guidance to society (for the sake of leadership, avoidance of discontent, general health, avoidance of useless sacrifices, etc.) becomes great in proportion as:

a. Society develops great need for talented leadership or expert service. (Note means by which candidates in America are selected for West Point, for medical colleges, for scholarships, for specialized work under national, state, and municipal civil service, for promotion in business, and for certification as teachers.)

b. Occupations develop to the point where very purposive training is requisite, and where ill prepared individuals suffer greatly. (Note conditions now to be met by one who would "succeed" as farmer, stenographer, mine manager, hotel cook, public singer, traveling salesman, and promoter of oil-well-drilling operations.)

c. Economic evolution creates conditions inimical to the health of all but specially fit or specially prepared individuals. (Note writings on "industrial diseases" and the pathological accompaniments of stone cutting, elementary-school teaching, mattress making, rag sorting, pottery manufacture, navigation, nursing, farming, steel working.) Consider separately for these workers: girls; mature women; boys; mature men.

d. Economic evolution creates conditions of work so complex that the worker believes himself exploited and prevented from shifting or advancing as he desires. (Note that under primitive conditions man worked largely *against* nature, whereas in advanced economic organization he seems to be working chiefly *against,* or in competition with, other human beings; that he needs for his contentment knowledge as to whether he is in right work, etc.)

PROBLEMS OF SOCIAL NEED

1. Is it probable that the proportion of persons naturally endowed as geniuses (of various species), leaders, altruists (of exceptional influence), vagrants, subnormals, etc., is substantially the same everywhere—country and city, Massachusetts and North Carolina, peoples of Huguenot and of

Italian ancestry? Under similar social stimulus, should we expect as many inventors from Georgia as from Connecticut, as many feminists from the farm as from the suburbs, as many morons from Denver as from Fall River? Should and could society do more than it now does to try to discover in youth potential promising poets, opera singers, military leaders, inventors, business executives, pugilists, baseball players, moving-picture artists, physicians, teachers, statesmen?

2. Historically, has it been true that "any one" could be farmer, country school teacher, home-maker, Congressman, salesman, storekeeper? Enumerate vocations now demanding workers who need only be "bright girls," sixteen years or more old. What are the vocations now open to more or less "broken" elderly women of no education? What are vocations now open to impoverished "gentlewomen"? Middle-aged farm hands? City-raised boys of fifteen? Steel-factory workers of ten years' operative specialization?

Could one of those classes easily become a sailor, general machinist, watch repairer, dressmaker, vaquero, chauffeur, stenographer, dentist, actor? What qualities do bright girls, eighteen to twenty-five, bring to rural school teaching that men twenty-five to forty who will work for the same money usually do not? A high-school principal declares that employers only require that a boy have "pep," and that a girl be "quiet." Interpret.

At what age do men or women normally become: school principals; mine foremen; policemen; locomotive engineers; college teachers; Congressmen; traveling salesmen; sailors; "full-responsibility" home-makers (through marriage); sea captains; business "managers"? What minimum general schooling is expected (by employing authorities) to precede in each case? Vocational schooling? Experience in related vocations? What unrelated vocations may precede?

3. In a certain area granite stone cutting is the most accessible employment for muscular men of mechanical leanings. The tuberculosis rate is high in this industry. What problems arise for vocational diagnosticians?

What evidence have you that the following are relatively unhealthful occupations: cotton textile work for girls fifteen to twenty; business leadership for men forty to sixty; farm life for home-makers; bookkeeping for men thirty to sixty; elementary teaching, women thirty to forty; medicine for women; hotel waitress service for women twenty-five to thirty-five; stoker and firing service on steamers; general work in dynamite factories; coal mining; railway switching? What are your present prepossessions as to these and twenty other vocations to be named by you? Do you consider these facts as to the vocational healthfulness of such callings important in guidance? How can sound generalizations be procured?

4. Why do so few of the following leave their adverse home surroundings: Labrador fishermen; Bedouin Arabs; French peasantry; Central African negroes? Why do the following migrate: Irish peasantry; Russian Jews; moun-

tain whites of the Appalachians; Japanese; gypsies? Do the same peoples work generation after generation in American coal mines? Cotton mills? Farms? Teaching professions? Why? In which of the following vocations do your prepossessions suggest that workers are most exploited or disadvantaged by "man's contrivance": coal mines; ten-cent stores; hospital nursing; pioneer farming; elementary-school teaching; college teaching; laundry work; waiting service in large hotels; navy; tropical fruit growing; matrimony and home-making (among the poor); market gardening. Compare the following vocations as to opportunities for intimate relations between employers and employees; law offices; men's hat factories; cartridge factories; small grocery stores. What relative scope do each of these vocations give for exercise of the "creative impulse" (which first define): small pioneer farming; watch-factory operative; department-store clerk; coal-miner; locomotive fireman; farm home-maker (Nebraska); orange-grower? Which of the following vocations possess for you (or young persons known to you) the deepest halo of general attractiveness: candy-store clerk; sea captain; bedside nurse; high-school teacher; diamond-cutter; gold-miner (on small scale); raisin-grower (California); fur-trapper? Does distance (and what else) lend enchantment to the view?

Give examples where real or apparent vocational "misfitting" is now readily possible, giving sources of your impressions.

D. Vocational opportunities are at any given time limited by:

a. Social demands for particular service;

b. Accessibility of openings to potential workers;

c. Possession of capital and tools;

d. And by numerous minor factors.

PROBLEMS OF OPPORTUNITIES

1. Estimate on basis of census figures probable annual replacements needed in the United States in the following fields of service: physicians; high-school teachers; farmers; opera singers; elementary-school teachers; building carpenters; diamond-cutters; novelists; stenographers; automobile-factory operatives; coal-miners; domestic servants.

2. What will probably be openings (*a*) within California and (*b*) outside of that state, caused by annual replacements of: lawyers; dentists; textile-mill operatives; locomotive engineers; oil-well drillers; bank clerks; home-makers; firearm mechanics; teachers of music?

3. Out of one hundred thousand girls in the fifth grades of certain village schools in Iowa, what proportion will or can normally find vocational openings as: physicians, thirty to fifty; home-makers, twenty to sixty; elementary-school teachers, eighteen to twenty-four; same, twenty-five to sixty; domestic servants, sixteen to twenty-two; same, twenty-three to sixty; opera singers; civil

service research specialists; farm operators; newspaper editors; dentists; store (indoor) clerks or saleswomen; barbers; saleswomen at salaries upward of three thousand dollars?

4. Out of one thousand girls graduating from general courses in high schools of suburbs of Chicago, what numbers could and should find vocations as: trained nurses; counter saleswomen; "ladies of leisure"; lawyers; home-makers, twenty-five to sixty; professional actresses; domestic servants; farm laborers; railway operatives; shoe-factory operatives?

5. Of one thousand boys finishing first year only of four-year high school, what proportion, in a city like New Orleans, are likely to become: agricultural field hands; physicians; high-school teachers; skilled oil-well workers; farm owners; trained nurses; hotel cooks; stenographers, thirty to sixty?

What changes of proportions would you predict for one thousand high-school graduates, same environment?

6. In a certain reform school in a New England manufacturing state are four hundred boys aged thirteen to seventeen. Nearly all are retarded and more or less corrupted. Some are keen and lawless, many plodding and dull. Assuming possibilities of twelve hundred hours' good vocational training in schools or corresponding part-time school and apprenticeship, what vocations would seem most promising for them?

7. In a certain North Mississippi Valley state is a school for persons blind from early childhood. The school is endowed to give from twelve to twenty-four hundred hours' specific vocational training from ages sixteen to twenty. Take its problems as your own: are there vocations that prefer a blind to a seeing person of equal native and acquired abilities? What are vocations that would probably prefer a blind to a seeing person, otherwise equal, at 20 per cent. less wages? Is it expedient to train blind boys of good ability to be: dentists, high-school teachers of mathematics, piano tuners, chauffeurs, cooks, farm operators? Should the girls try to become: nurses, primary-school teachers, typists (without stenography), home-makers? What is now known about vocations for the blind of each sex, where competition with seeing of equal ability and perhaps less training is practicable?

8. To what extent should possible mobility of workers figure in vocational guidance? Compare the relative mobility (ability to leave home and travel to distant places) of following workers: girls fifteen to twenty, of poor parents, living in city, and of average "manual worker" abilities; girls, twenty to twenty-four, college graduates; boys, farm reared, suited to general "manual work," poor parents; young men of excellent ability, fairly prosperous families, trained for professions; skilled machinist with family of five children, active member of a church of small denomination; woman secretary aged forty-five, with lifelong associations in home place.

9. Under what conditions as to local openings, native abilities, sex, age, and possibilities of vocational training would good guidance advise: girls

from prosperous Minnesota farms to seek musical or theatrical vocations in New York; farm boys of mechanical bent to become city mechanics; boys of large Eastern cities to become farmers; girls of village environment, of excellent abilities and general college education, and genuine interest in having families of their own, to become lawyers or doctors; stenographers from Montana to seek Washington Civil Service posts; native American Southern negroes to seek barbering in New York?

10. What are now the various roads by which boys become "owning" farmers, with land and equipment worth from ten to thirty thousand dollars? A Boston boy of eighteen, physically hardy and mentally able, but owning no capital, and with no prospects of inheritance, is keenly desirous of becoming an orchardist; what would you tell him? A country boy of sixteen, excellent ability, but no actual or prospective capital, greatly desires to become a merchant in a large city; advise him. A city girl of much enterprise, good education, and prosperous parents, but no capital of her own, is zealous to become a farmer; advise her.

What capital is now normally required, after completion of vocational education, to equip necessary offices and to tide over "acquaintanceship" period for one who would be an independent: dentist; plumber; shoe repairer; doctor; lawyer; grocer; pharmacist?

11. Under what circumstances would you advise: a college girl of excellent ability, in her third year of college, to study architecture; a high-school boy of bookish interests and moderate ability to become a country school teacher; a high-school girl to seek a vocation that would not interfere with her matrimonial chances?

Would you advise: A Massachusetts negro to enter a normal school in that state? A bright negress in a Rochester high school to prepare in stenography? A girl of native American stock to seek a career in domestic service? A boy to follow stenography as a life career? A Russian Jewess of exceptional ability, but pronounced racial characteristics, to seek a high-school teaching position in Georgia, or Texas, or northern New York? A bright hunchbacked girl to seek to become a primary-school teacher, a trained nurse, a salesgirl, or a proof-reader?

Certain vocations are good for juveniles, but poor for adults. What would you advise workers as to "upgrading" or advancement? Discuss in this connection: textile operative work; grade teaching; "ten-cent store" salesmanship; switchboard operating; cigarette making; telegraph messenger service.

E. Problems of vocational guidance arise largely from defective sociological and psychological knowledge. Among current problems are these:

a. Are certain vocations more "overcrowded" than others? By what standards? For what reasons?

b. What is the full social significance of highly specialized vocations, and

what should be expected to be the normal progress and stay of workers in them?

c. Under what circumstances, and to what extent, can or should vocational guidance "blacklist" undesirable or antisocial vocations?

d. What are the possibilities of "dual," "alternate," "major" and "minor," and "dull season" vocations?

MISCELLANEOUS PROBLEMS

1. At the present time do you think that stenography is more "overcrowded" than domestic service? Medicine than electrical engineering? General factory work for girls than farming? Elementary-school teaching than traveling salesmanship? What, as you see it, are the least, and what the most, overcrowded fields now for: "unskilled" men workers, strong and mature? Average young girls of sixteen in New York, with one year of high-school education? Strong high-school boy graduates able to give five or six years to professional education? What is the real meaning of: "There is always room at the top"?

In what vocations does alleged overcrowding seem the result of indeterminate standards, or greatly variable standards under the same vocational name? Illustrate from farming (in days of public land settlement), public office holding, stenography, domestic service, brokerage, indoor salesmanship. When an employer asks, "What can you do?" and the young applicant replies, "Anything," what does he mean, usually?

What are some vocations now imperfectly developed which you think likely to develop greatly during the next few years? Would you advise persons of apparently suitable talent to try to become: moving-picture actors, brewers, orange growers, advertising illustrators, bond salesmen, high-school teachers?

What are now the most "popular" vocations with: college women; men graduates of Harvard and Yale; boys of exceptional mechanical ability?

2. Analyze processes of subdivision of labor found in producing: shoes; cotton cloth; knitted goods; watches; cartridges; automobiles; packed fruits; pamphlets; newspapers; telephony; railway transportation; ready-made clothing; fountain pens; tableware; coal; steel rails; staple furniture; sugar (beet); sugar (cane); raw rubber; men's hats.

Within any one of the foregoing fields, give varieties of workers, producers, supervisors, etc., grades (as expressed in compensation), and estimated number in each. What facts can you discover as to relative maturity of workers in each grade? Under what kinds of vocational education could workers of sufficient maturity be advanced to higher grades?

What are your chief prepossessions against specialized work on the score of physical healthfulness? Psychological healthfulness? Social healthfulness? Contrast (in order to show effects of specialization) workers from

farming, home-making, retail shoe clerking, janitor service, peddling, and sheepherding, with workers of similar age, sex, and income from furniture factories, steamer navigation, locomotive manufacture, book manufacture, and street-car driving.

Define forms of leadership and highly paid special service now found in: street-car operation; department stores; telegraphy; cloak manufacture; and explosives manufacture. To what extent, and under what circumstances, are these "advanced from the ranks"? Is it presumably economical for a street-railway system to pay its president sixty-five thousand dollars a year?

3. What are certain antisocial vocations besides burglary and other felonious pursuits? What place do you give to: cigarette making; tobacco farming; firearms manufacturing; "patent medicine" manufacture; military training; oil mining; stock brokerage; advertising illustration; opera singing; diamond cutting? Which of these vocations do you regard as of greatest relative service to society: rural school teaching, fruit farming, jewelry making, commission merchant service, novel writing, dentistry, moving-picture operating, naval service? How would or should recommendations of vocational guides be affected by valuations here?

Should vocational guidance urge: boys to "stay on the farm"? Girls to strive decently toward matrimony? Young workers to get into vocations having no "bosses"? All persons to get "civil service" government places? Girls and women to get into fields now largely occupied by men? Men to take indoor salesmanship? Men to take up elementary-school teaching?

4. Some vocations, and especially those of a primitive type, are composite —*e.g.*, general farming, home-making, small retailing, general handiwork, domestic service, machine repairing. Many others tend toward simplification and specialization. The following special problems arise:

a. Is it desirable and expedient that a specialized operative, working with one type of machine, should be able to transfer to others, in case inventions or shifts diminish importance of his specialty?

b. Is it desirable and expedient that workers in "seasonal" industries qualify to carry on others in "off" seasons (elementary-school teachers often wait on table in summers; harvest hands take up railroad or lumbering work in winter, etc.)?

c. Where factory operatives have an eight-hour day (and, in growing season, a forty-four-hour week), are gardening, poultry raising, etc., desirable and practicable minor vocations?

d. Married women, under some circumstances, claim to find home-making duties insufficient to fill their time. Can and should they seek opportunities for wage-earning in teaching, farm labor, hotel service, factory work, writing, music? Discuss for poor economic levels (negress field workers), highest economic levels, and others.

F. The case method of study is now a profitable means of opening up the actual problems in this largely unexplored field. As fast as practicable, persons with professional aims here should assemble realistic cases. The following hypothetical types of cases are submitted as illustrative:

Case A (individual). A boy in Bridgeport, Connecticut, has reached sixteen years of age and just graduated from the elementary school. His father is a janitor, American born, his mother Irish born and of meager education. Neither desires to support the boy longer in school. (There are four smaller children in the family.) The boy has lost interest in general schooling (having been two years retarded) and is eager to earn money. Wants to be an electrical engineer, editor, or leading business man. Was low grade in school studies, except vocal music, in which he has moderate talent. Bridgeport is chiefly a machine-shop city, with usual commercial openings. It has good day trade school (two years' course), besides evening classes for persons employed in the shops.

This boy desires advice as to next ten years. What further facts do you need to know regarding him? What would you now advise him to do?

Assume that he enters a gun factory as machine operative, and at nineteen is earning thirty dollars a week, but is restless and wants promotion, or a new type of work. What facts would you need to know and what advice could you now give?

Case B (individual). In Albany, New York, a girl (Ellen) of seventeen has just graduated from the classical high school. Her parents are poor Irish people with six children, all slow but Ellen, whom they have favored, at much sacrifice, because of her intellectual brilliancy. Earlier she was eager to teach, but her schoolmates have persuaded her that teaching is cheap and poor work and gives no chance to meet men. Ellen is especially strong in English, but poor in mathematics and music. Her parents can not afford to send her to college. Her mother is convinced that Ellen will marry by the time she is twenty. There is a large commercial department in the local high school, but no other opportunities for vocational training. The girl is in fair health, but inclined to nervousness. She may have to help toward the education of her younger brothers and sisters.

Would you care to give this girl vocational tests? Make recommendations looking to the (*a*) next two years; and (*b*) the next five years, on assumption she will not marry.

Case C (school). The junior high school of N., in Massachusetts, has twelve hundred seventh- and eighth-grade pupils, besides two hundred retarded boys and girls over twelve and under sixteen. The community is mostly suburban. About four hundred of the pupils come from homes that will not oppose their leaving school as soon as the law allows; and about eight hundred from families very ambitious to have their children finish high school. The school offers generous and flexible programs of manual training

and household arts, a slight amount of gardening, and no commercial work. All pupils leaving school after fourteen must get working papers, involving a physical examination, and capable of involving such other examinations as may be desired.

The school authorities have been convinced that vocational guidance is desirable, and have appropriated twenty-six hundred dollars annually for this purpose (but with stipulation that not more than two thousand dollars shall be spent on salaries). But they have as yet no program, and have asked the superintendent to make recommendations. He asks you to submit yours. Especially does he want to know: (*a*) Should one full-time guidance teacher be employed, or a man for the boys and a woman for the girls? (*b*) Should proposed work be chiefly informative and inspirational, or diagnostic and placement? (*c*) Should any of it be obligatory on (1) all pupils, or (2) pupils applying for working papers, or (3) should it be elective? (*d*) Should time be given it in the regular schedules of studies? Where? How much? For whom? (*e*) Is it desirable that the guidance teacher or teachers should influence aims or other studies? (*f*) What should be the specific character of offerings (consider regular instruction, guided readings, individual advising, class visits to mills, lectures by teachers, etc.)?

Case D (school). In a prosperous farming (and related commercial) area in eastern Kansas is a high school of two hundred pupils. The principal has been given six hundred dollars yearly to provide for vocational guidance. Nearly half the pupils will graduate, and half of these will go to normal schools and agricultural colleges. Many of the boys want to follow farming, but all the girls aspire to urban work and permanent residence. Give this principal advice as to how to proceed.

FOR SUPPLEMENTAL READINGS AND REPORTS

BREWER, JOHN. *The Vocational Guidance Movement* (Ch. 1, The Problem of Vocational Guidance).

BLOOMFIELD, M. *Readings in Vocation Guidance.*

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CHAPMAN, J. C. *Trade Tests* (Sect. 6, The Place of the Trade Test in Industry).

HOLLINGWORTH, H. L. *Vocational Psychology.*

SMITH, W. R. *Introduction to Educational Sociology* (Ch. 13, Vocation Guidance as a Socialized School Function).

WEAVER, E. W. *Profitable Vocations for Boys.*

WEAVER, E. W. *Profitable Vocations for Girls.*

VOCATIONAL EDUCATION—GENERAL

INTERPRETATIONS OF EXPERIENCE

EVERY adult has had a wide range of contacts with vocations and vocational education. He and his close associates have often speculated as to the kinds of work he was fitted for. He has sometimes desired to get into kinds of work for which, manifestly, he had no preparation. Probably relatives or circumstances have forced him to do work for which he had much distaste. He has painfully learned that he was "born short" as far as certain kinds of attractive work are concerned.

Then, too, he has been a utilizer of the good or bad work of others—teachers, cooks, dentists, shoe repairers, watchmakers, street-car motormen, mail clerks, policemen, tailors, ministers. Some of these were well trained and competent workers, some were charlatans, and some were of good intentions but incompetent. Each adult has been the victim of poor workers, and has probably victimized others. Out of your experience, answer some of these questions:

1. What are some vocations which you have practised?

2. What are some vocations practised by others which you have observed closely?

3. Name the vocation, or vocations, for which the following give fairly complete vocational education:

a. West Point Military Academy; *b.* a state agricultural college; *c.* the Commercial Department of a large city high school; *d.* a normal school (known to you); *e.* a medical college; *f.* a pre-vocational junior high school; *g.* a trade school known to you; *h.* the Home Economics Department of a large high school.

4. Do you think it desirable and practicable to establish vocational schools at public expense and under public control for the following vocations:

a. Dentistry; *b.* stenography; *c.* coal-mining operative work; *d.* locomotive firing; *e.* custom tailoring; *f.* barbering; *g.* orange growing; *h.* home-making; *i.* shoe-factory operative specialty; *j.* deep-sea fishing; *k.* domestic service; *l.* high-school teaching of French; *m.* kitchenware salesmanship in department store?

5. As far as you can surmise, what are the (1) *prevailing earliest* years at which the following vocations are begun and (2) what vocational pursuits usually precede them:

a. Hotel waitress; *b.* "owning" general farmer; *c.* elementary-school teaching; *d.* weaving, textile factory; *e.* machine-shop foreman; *f.* bank cashier; *g.* "full-responsibility" home-maker; *h.* journeyman bricklayer?

6. Estimate the number of days, of eight hours each, beginning at an age to be specified by you, that a good vocational school would probably require to give basic vocational education to "full earning capacity" in the following vocations:

a. Lawyer; *b.* poultry farmer; *c.* office file clerk (girl); *d.* hotel cook; *e.* home-maker (twenty-five hundred dollars income); *f.* grocery-store clerk; *g.* surgeon; *h.* high-school teacher of mathematics and physics; *i.* cotton spinner; *j.* ready-made clothing operative specialty; *k.* telegraph messenger boy; *l.* auto-truck chauffeur; *m.* village house carpenter.

7. What minimum *general education* do you regard as *essential* for entry upon vocational education for the following vocations:

a. Physician; *b.* barber; *c.* foundryman; *d.* cotton grower; *e.* street-car motorman; *f.* stenographer; *g.* certified accountant; *h.* kindergarten teacher; *i.* railway switchman; *j.* copper-mine operative; *k.* automobile repairman; *l.* children's nurse; *m.* locomotive engineer; *n.* home-maker; *o.* cotton-goods factory superintendent.

8. Designate ten vocations that seem capable of being taught in conjunction with general high-school studies, housing, equipment, etc.

9. Designate ten vocations that would probably require conditions (location of schools, admission and standards, equipment, etc.) very unlike conditions usual to high schools.

10. Name ten vocations for which you would deem it desirable to train young men, age eighteen, of C— intelligence (on scale of A, very superior; B, superior; C+, high average; C, average; C—, low average; D, inferior; E, very inferior) of less than fifth-grade education, but of strong, healthy bodies.

11. Same, but of weak muscular powers.

12. Same, young women, of C— intelligence and poor physique.

EVOLUTIONARY PHASES

"The current movement for vocational education" is still too immature to possess a technical literature. Only faint traces of that movement can be discerned prior to 1906, when the "National Society for the Promotion of Industrial Education" was formed. Like all other social movements in a democracy, that for the furtherance of vocational education has gone far without comprehensive formulation of its essential objectives. In the fundamental sociological sense, the world has always had vocational education. All of the sixty-odd million adult workers found to-day in

the United States have been vocationally trained and instructed. Five or six per cent.—including nearly all lawyers, doctors, and agricultural experts, as well as some elementary-school teachers and many stenographers —were educated for their vocations in special vocational schools. Another 5 to 6 per cent. were vocationally prepared through definitely organized apprenticeship training—the most direct and purposive vocational education that society has heretofore evolved.

But nearly 90 per cent. of all the adult workers of America have been the beneficiaries,—in many cases it would be more accurate to say the victims,—not of school or of apprenticeship vocational education, but of what it is technically correct to designate as "pick-up"—training and instruction. Nearly all farmers, sailors, miners, factory operatives, salespeople, and home-makers have, indeed, achieved substantial proficiency in their respective callings. But, vocationally speaking, they are largely self-made. They have acquired skills, technique, appreciations, attitudes, and ideals "on the job"—sometimes under direction of a parent, more frequently under a foreman bent on "production," and not infrequently in the blind isolation of unassisted "trial and error." Pick-up vocational education is like the arctic regions—it selects, and often greatly rewards, the naturally superior. But it is a wasteful and cruel process for all those of average or less than average natural endowment. It disheartens and wastes and maims and breaks men and women by hundreds of thousands each year. It is the chief source of ghastly labor "turnovers," the parent of the I. W. W. spirit. It is as wasteful and ineffective, in its way, as was pick-up education toward literacy in days before public schools came into being.

In stark simplicity, the current movement represents a nation-wide desire and attempt to substitute for pick-up methods of vocational training—and for apprenticeship, too, where that has broken down—the purposive methods of special vocational schools. These are expected to be, and can be made, as effective for at least several hundred distinctive vocations now followed by the rank and file of workers as professional vocational schools are for the vocational élite.

SOURCES OF INTEREST IN VOCATIONAL EDUCATION

What are the chief sources of the great strength of the still very new movement for publicly supported and publicly controlled vocational education through schools for the thousands of vocations now found? There

are several such sources. The first is found in contemporary interests and beliefs in conservation—the conservation of human powers, human courage, human well-being and happiness. There can be no permanent well-being or happiness for men or women that does not rest on foundations of assured abilities to produce economic goods. But such abilities can never be fully and economically realized through pick-up vocational education; and even apprenticeship is a means of apparently dwindling effectiveness.

The second source is in the *spirit of democracy.* Schools of general education have in several essential respects become reasonably democratic in America; but our system of school vocational education is still very aristocratic. New demands involve no impairing of professional schools, but only that something of a fair chance shall be given also to those who can not reach the higher vocations.

A third source is found in the vocational *"closed doors"* created, quite generally with no evil design, by modern economic conditions. Modern apprenticeship is none too generous in its efforts to open the doors of advancement to aspiring workers; but such meager opportunities as it gives are as freedom to slavery when contrasted with those available through most forms of pick-up vocational education. The really tightly closed doors of advancement in modern productive work are found in the highly subdivided "operative" fields of modern manufacture, mining, and transport. The situation has been slightly relieved through public provision of facilities for extension vocational education in the fields of farming, home-making, and commerce. But no theory of vocational education is at all adequate to contemporary social needs which does not recognize that in numberless situations specific and purposive full-time vocational education through schools is more urgently needed by men and women from twenty to thirty years of age than by juvenile wage-workers from fifteen to twenty years of age. Our urban boys and girls can get work readily enough without direct vocational training, notwithstanding that in the great majority of cases three to six months' direct full-time training would often be of great value to them.

But their juvenile earnings, ample enough for their needs during their home-staying, unmarried years, will prove far from sufficient as they take on larger responsibilities. The real vocational crisis for hundreds of thousands of our fellow citizens comes when, somewhere between eighteen and thirty years of age, they seek to "step up" from juvenile vocations to those appropriate to men and women. Here is where they

encounter "closed doors"—closed through no evil intent, but simply because of the same kind of social stupidity that tolerates governmental inefficiency and wars.

EXPERIMENTAL BEGINNINGS

The contemporary "movement" for vocational education is, therefore, in essence a gigantic social aspiration and effort to substitute a purposive and direct form of education for a blind and indirect form. No competent student of the several forms of purposive education essential to the security of a democracy expected to embody the ideals of twentieth-century social economy now doubts that, given the opportunity, America will proceed steadily to evolve special vocational schools for the several thousand distinctive vocations through which our highly organized economic production is now achieved. Few competent students doubt that these schools, experimentally attempted under private or philanthropic effort at first, will eventually be evolved under public support and control no less extensively than are now high schools of general or liberal education.

In the meantime, and of course quite consistently with usual practice in a democracy when new aspirations are being evolved and experiments in new social policies are being experimented with, numberless faddish and fraudulent imitations are promoted. Medicine, theology, agriculture, and political organization have never been able, even after years of development, quite to shake off their parasites. Even genuine college education has its numberless deceptive imitations, its faddish shams. Small wonder, then, that the movement for sound vocational education, which already makes the popular appeal indicated by the unanimous vote of Congress for the "Smith-Hughes" Act, should evoke all sorts of imitations, substitutes, and shams. These have not been confined to money-making or self-advertising ventures. Thousands of high schools of general or liberal education have sought to "vocationalize" their offerings—observant, perhaps, of the numerous liberal arts colleges which in recent years have sought, by modifying old courses or constructing new bookish ones, to give a so-called "vocational trend" to their work.

The manual arts courses of junior and senior schools have especially tempted exploitation of popular credulity. These obtained their original public support, indeed, in the somewhat vague expectation that they would serve the ends of "practical" education. Could they not still be made into something looking sufficiently "like" vocational education to "hold pupils

longer" in school? Even legislatures decreed that "agriculture" should be taught in all public shools—high and low! "Rural life" high schools were projected in which "vocational agriculture" was supposed to "motivate" the general studies. The Commission on the Reorganization of Secondary Education, speaking, apparently, with the approval of the National Education Association, recommended in effect a large "vocationalizing" of all high schools as a means of "relating education to life."

All these obscure and often misleading proposals accomplish nothing toward the ends of genuine vocational education. But they constitute a serious and hurtful disservice to the general or liberal education for which the high school was primarily established and should be supported. These ill-timed efforts to transform our secondary schools of general education serve to obscure the urgent need of rendering that education more truly functional and efficient—partly as respects its methods, but very much more as respects its objectives. It is high time for educators generally to join in denouncing the corrupting influences of sham vocational education. They can greatly help all education if they particularly insist that public support and approval be no longer conferred upon fads and imitations.

GENUINE VS. SHAM VOCATIONAL EDUCATION

Genuine vocational education—what are some of its characteristics? These can best be discovered through study of the aims, methods, and administration of those existing schools which have long been approved by enlightened opinion as giving purposive and fairly effective vocational education. Representative of these are: the better medical colleges; well developed normal schools; certain efficient schools or departments of stenography and typewriting, some under private direction, and a few located in large urban high schools; the United States War Academies at Annapolis and West Point; the more widely known schools of engineering; a few endowed, and a very few public trade schools of dressmaking, machine-shop practice, automobile repair, sign painting, and electric wiring; schools of pharmacy, dentistry, and commercial (advertising) art; and certain private schools of telephone switchboard operation, tractor driving, and printing.

Certain outstanding qualities characterize these schools. First, each is organized with unmistakable reference to the needs of one, or a very few closely related, vocations. Second, each integrates into its curriculum large amounts of practical work of a productive character, notwithstanding that, in several of the vocations toward which they train, mastery of

technical knowledge plays a very much more important rôle than it does in vocations of less than professional level. (And, incidentally, it should be noted that all progressive normal, engineering, medical, and stenographic schools are yearly increasing the proportions of time given to training through practical participation in productive work.) Third, these vocational schools may be affiliated with others (as, for example, in a university or secondary-school system), but they are not merged or blended with others as respects courses and faculties. Fourth, each develops and transmits to its students a set of social ideals, including professional ethics, appropriate to the vocation. Fifth, each, according to its field of opportunities, establishes many connections with the external fields of employment into which its graduates go—and in recent years these are being scientifically studied through intensive "follow-up" inquiries. Sixth, while most of these schools concern themselves primarily with "basic" or "full-time" vocational education, they recognize the possibilities of extension vocational education, and clearly differentiate the two types in methods and in administration.

It need hardly be said, of course, that genuine vocational education rarely finds it necessary to exploit public credulity, to employ vague and mystical terms in explaining its objectives, or to cater to the desires of considerable numbers of students who will probably not follow the vocations for which this expensive training is given.

It is also obvious that the true vocational school requires the full working time and energies of its students. Professional schools rarely make a showing in intercollege athletics. Pupils in lower vocational schools can not "get by" on a five-hour day, a five-day week, or a forty-week year—though not a few trade schools are still attempting to do so in their desire to imitate schools of general education.

"Sham" vocational education in public or endowed schools—what are its usual characteristics?

First, it is lacking in clearly formulated vocational objectives stated in terms of the various forms of vocational proficiency recognized by employees and employers. It masquerades its objectives behind vague and plausible phrases such as "woodworking," "business English," "shop mathematics," "principles of agriculture," "salesmanship," and "industrial history," in spite of the fact that these terms, on definite analysis, exhibit no consistent relations to particular vocations as pursued under contemporary conditions. Then, too, much use is made of highly generalized formulations of such objectives as "pre-vocational training,"

"pre-apprenticeship education," "vocation testing," "industrial intelligence," and the like.

Second, most forms of sham vocational education are suffered—gladly, it would often appear—to play minor rôles in the curricula required or advised for pupils. The "regular" school subjects monopolize the best part of the student's time and energy. In many secondary-school commercial departments, college preparatory mathematics, a foreign language, and much academic English are required to the end that the student may have a "high-school education," as well as what is alleged to be vocational training. The home economics courses playing minor rôles in many high-school curricula are a travesty on honest training toward home-making proficiency. Technical high schools, once liberally supported by voters and parents in the belief that they would function as vocational schools, have tended steadily to become college preparatory schools—a worthy enough object, if honestly stated to the public. So-called "agricultural high schools" are indignant if their students can not offer all of their courses for credit toward admission to higher institutions.

Third, they have as yet developed no adequate connections with fields of employment. Graduation requirements are not standardized in terms of "market" demands—and yet, nearly 100 per cent. of all workers under thirty years of age in the non-professional vocations must serve as "employees" in some capacity. There are still to be found alleged vocational schools of printing whose graduates must enter apprenticeship at the same level as boys who have never seen a font of type or a printing press.

RELATIONS TO GENERAL EDUCATION

In most states existing legislation permits children after fourteen years of age to enter upon full-time vocational employment. We can readily imagine a vocational school with very specific aims and intensely "narrow" methods; but can we imagine such school education as being "narrower" than that pick-up training now given to juvenile workers in their industrial and commercial pursuits? The best that we can do to-day, in fairness to all our people,—the prosperous and unprosperous, the able-minded and the frail-minded,—is to require that the entire time of compulsory full-time school attendance shall be devoted to the ends of general or liberal education.

The elements of sound public policy in this respect have been clearly reflected in all that state and national legislation which provides financial

aid for the encouragement and support of vocational education. In no case did such legislation, when enacted, permit the financial aid provided by the state to be given toward the support of any form of vocational training of those young people who had not previously reached the age and educational attainment which made them legally free to quit school altogether. Young people under these laws were entitled to enter vocational schools only when they had become equally eligible to work an eight-hour day for wages in factory, store, or elsewhere.

Many social economists and some educators believe that the time is not far distant when no one under nineteen, or at least eighteen, years of age will be obliged to work full time for wages. Under these conditions it would, possibly, be sound policy to require by law that the years from twelve to eighteen should be devoted, as are now the years from six to fourteen, exclusively to general or liberal education of the scope and kind best suited to the learner's powers and probable future opportunities and responsibilities. At the close of this period devoted wholly to general education, there could be provided by state and nation in hundreds, perhaps eventually in thousands, of specific varieties, rigorous vocational courses ranging in length from four months to four years, according to the complexity and difficulty of the vocation and the needs of learners.

Under present economic conditions, hardly half the boys and girls of the usual urban or rural district can afford the expense of remaining in a full-time school up to sixteen years of age. Probably not more than one fourth could afford to complete a full high-school course. But economic conditions may continue to improve for Americans during the next hundred years, as they steadily improved during the century since 1820. If so, we can readily anticipate a time when the state can, without imposing undue hardship, require all parents to keep their children in full-time schools up to eighteen, or, if a minimum of a year for vocational education be added, up to nineteen years of age. The alternative, obviously, is that the state should grant financial aid to those learners, and to their dependents, who can not bear the entire burden alone. Such a policy would involve an advance in state socialism so great as to be outside the realm of practical political discussion, at least for the present.

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CHAPTER XXVII

AGRICULTURAL VOCATIONAL EDUCATION

INTERPRETATIONS OF EXPERIENCE

THE farming vocations are of many kinds. We all know of men who make their living chiefly through dairying. Others specialize in some form of market gardening or fruit growing. There are still large sections of the United States and Canada where little besides wheat is raised for sale. For many years the chief export crop of the Southern states was cotton. In the Rocky Mountain area are many gigantic cattle and sheep "ranches."

Every boy raised on a farm can become, by imitation, a farmer—of a kind. Once, when free land was abundant, it was generally assumed that if a man could "make a living" in no other way he could "take up" a quarter section of land and "farm" it. The first pioneer settlers across North America lived for the first few years of their settlement largely by hunting and trapping. Then they tended live stock—cattle and hogs for food, sheep for an easily carried salable product, and horses for transport. Next, land was cleared to raise hay, vegetables, and some grain. When railways came, or when rivers were not too far away, grain, tobacco, cotton, meat, and fruit were produced for distant markets.

But by this time farming has ceased to be a simple vocation. When free acres can no longer be had, when the land and equipment of a medium-sized farm come to be worth from five to fifty thousand dollars, only men of superior industry and managerial powers can hope to earn taxes, interest, and reasonable wages on their investments of time, labor, and capital.

Agricultural science has made prodigious advances in the United States since 1865, when Federal authority and aid were for the first time given to the founding of agricultural colleges in all the states. The farming vocations now have back of them as much applied science, probably, as medicine and the various kinds of engineering, though of course it is impossible that typical farmers should *learn* as much of this applied science as do physicians and engineers. Nevertheless there is little future for the farmer who is not able-minded enough to make considerable use of scientific knowledge and method. Nearly all of us have had enough contact with the farming vocations to answer some of these questions:

1. What are the chief visible characteristics of typical farmers whom you have known whose chief money income is derived respectively from: market

gardening near large cities; corn, oats, and hogs, Middle West; California fruit; Southern cotton; New England dairying; Southern tobacco; Pennsylvania "general farming"; Oregon apples; Northwest wheat; range cattle; "stall-fed" beef; poultry as specialty? Separately consider such aspects as: their usual property; prevalence of renting; optimistic outlook; usual culture; boys "leaving the farm"; extent of applied science; contentment of "women folk"; usual forms of coöperation; probable future.

Select one of the foregoing and endeavor to "job analyze" a typical day's work and a typical year's work. How far ahead must the farmer plan, as a rule?

2. Trace from memory some typical history of a farmer's son who became in turn a farmer, from the age of ten to forty-five, showing the stages he passed through. When did he become an "independent farmer"? How did he get needed capital?

3. Trace the stages by which some person known to you started out as a farmer, but finally "failed." How far did this failure seem due to poor managerial ability?

4. In your experience, do the ablest sons of prosperous farmers usually become farmers? The least able sons of unprosperous farmers? How are these conditions affected by proximity of industrial and commercial cities—Massachusetts, Ohio, Illinois, Alabama? Does it seem probable to you that the farming vocations will in the future be recruited chiefly from persons with not enough intelligence to enter the professions, but with intelligence superior to that of common labor?

5. What kinds of persons is it folly for us to urge to "stay on the farm"? What kinds of urban people should be urged to go to the farm?

THE AGRICULTURAL VOCATIONS

Agricultural vocations were followed, in 1920, by nearly eleven million persons—of whom slightly more than one million were women. Further study of the census figures shows that most of the women thus recorded as "farm laborers" were in Southern states—hence obviously they were colored.

Agricultural vocations are less attractive to large proportions of farm boys of superior abilities than are professional and business callings. Many farm boys of less than average abilities, starting perhaps as "hired men" on farms, become eventually wage-earners on railways, and in mines and factories. This trend "away from the farm" has been active, probably, since long before Revolutionary times. Very rarely has there been any perceptible drift from the city to the country. Various classes of immigrants from the peasant classes of Europe became farmers in

TABLE SHOWING MEMBERSHIP OF THE AGRICULTURAL VOCATIONS, 1920 (U. S. CENSUS)

	TOTAL	MALE	FEMALE
All occupations	41,614,248	33,064,737	8,549,511
Agriculture, forestry, and animal husbandry	10,953,158	9,869,030	1,084,128
Dairy farmers, farmers, and stockraisers	6,201,261	5,947,425	253,836
Dairy farm, farm, and stock-farm laborers	4,041,627	3,248,712	792,915
Dairy farm, farm, garden, orchard foremen	93,048	78,708	14,340
Fishermen and oystermen	52,836	52,457	379
Foresters, forest rangers, and timber cruisers	3,653	3,651	2
Gardeners, florists, fruit growers, and nurserymen	169,399	160,116	9,283
Garden, greenhouse, orchard, and nursery laborers	137,010	127,579	9,421
Lumbermen, raftsmen, and woodchoppers	205,315	205,036	279
Owners and managers of log and timber camps	8,410	8,397	13
Other agricultural and animal husbandry pursuits	40,599	36,939	3,660

America, especially during the period when good land was purchasable at low rates.

The economic and other social consequences of the "urbanization" of native born Americans has long been viewed with much misgiving. In part, of course, it is the product of the "mechanical age" in agricultural work. To produce a unit of food now requires far less labor on the farm than formerly—in the case of wheat, possibly only one eighth as much. Perhaps it would be more correct to say that the labor now required to produce a unit of food is dispersed—some to iron and coal mines, some to central factories, only a part remaining on the soil. The labor that makes the steel and the machinery of the harvester is, of course, labor toward the ultimate production of wheat.

In part, too, urbanization results from our abundance of raw resources other than soil. Nature has foreordained Americans to be a mining, lumbering, railroading, steel-making, meat-packing, and even textile-manufacturing people. No other people produces so much, consumes so much and accumulates so much, as we. The farming vocations are not, in

popular valuation, the best, either for comfort, leadership, or opportunity. Neither are they the worst. Hence the ablest youth leave the farms, and the subaverage are often forced from them—at least, if such farms are anything but poor hillsides, swamps, or pine barrens.

But future history will certainly be different here from the past. The free land now left is not to be farmed—at least, by individuals. Good farm land is high-priced. More than half our population—a population with high standards of consumption, too—is urban. Fewer people are producing food, and these are using land and tools that become more costly year by year.

We may become so industrial as to wish to pattern after industrial England in drawing our food from foreign lands—as we now get coffee, bananas, rubber, and much sugar. But, until the tropics come more fully under cultivation, the farming lands of the rest of the world could not supply us and Europe too. Hence the probable future for the agricultural vocations in America is bright—at least, for youths of superior native ability, vocational training, and industry. Land, markets, science, and machinery await them. Perhaps their greatest need for the near future will be sustained and efficient coöperation in marketing, large-tool ownership, and conservation of fluid credit.

AGRICULTURAL EDUCATION

America has always been very much an agricultural country. Within a scant hundred years it has quintupled its agricultural lands. Few Old-World traditions have held valid in New-World tillage and husbandry. The American farmer has been forced by many conditions to use much machinery, to employ scientific methods, and to market at a distance the major part of his product.

Our people have, therefore, made effective demands for governmental and commercial aid to agriculture. Agricultural colleges, experiment stations, and information service stations are widely distributed. Large corporations have devoted themselves to the manufacture of implements, to the marketing of meats, to the transportation of perishable products. Farmers themselves have formed successful associations to market fruits, develop irrigation and drainage systems, and to improve breeding animals. When a considerable number of farmers feel the same need, they can easily procure government service in meeting it.

Our urban populations are not without interest in agriculture. They

realize that a large part of their food, much of the raw materials they use in manufacture, and the markets for their products rest on a basis of prosperous farming. They are aware of the "drift to the cities," and would check it if they could. They dislike to contemplate a steady mounting of prices of farm products.

More effective farming for the next generation, if it is to come, must derive from many sources—better conservation, better transportation, better marketing, new inventions, more science, and more and better education. But the greatest of these, perhaps the source of sources, is education.

For half a century Americans, urban hardly less than rural, have given through taxation freely to education for farmers and farming. We have had a growing faith in agricultural education especially. Seldom have we known exactly what we meant by agricultural education—but the words have always had a magical lure. We have therefore experimented more or less blindly, but always with much faith.

Now we have at least the beginnings of a national program of agricultural education. True, some phases of that program are only barely decipherable in the educational theory and practice of the nation. But existing traces are important as suggesting possible future developments. Also, we are still much confused (without admitting it, often) as to specific objectives. Our faiths, enthusiasms, and credulities, of course, often lead us to expect good crops of educational values from barren soil or poor seed. We often have to get public support by methods familiar to the prospectus writer. Figs do not grow from thistles, even in agricultural education; but at certain stages of growth it is certainly not easy to distinguish between thistles and fig trees—so why not believe that they are all figs?

Our national program of agricultural education in 1921 has many compartments. First, we should distinguish between those types that contribute chiefly to liberal education, and those types that are designed to contribute to vocational education. They are still somewhat blended, to the great confusion of each purpose. Then we should distinguish, within the field of vocational education, some types that are higher or collegiate, and others that are lower or secondary. We should distinguish full-time from part-time and extension. Finally, we should distinguish basic (containing a large amount of practice) from technical (consisting chiefly of book and laboratory knowledge).

These various types may be classified as follows:

A. LIBERAL OR APPRECIATIONAL

1. Phases of nature study and gardening as agriculture in the first six grades of urban or rural elementary schools.

2. Practical arts, giving home project work in upper grades, for pupils chiefly between twelve and fifteen.

3. General courses in technical or informational agriculture in high schools.

4. Phases of economics, sociology, rural sociology, and (largely yet to be developed) liberalizing agricultural studies in college and normal schools.

B. VOCATIONAL OR EXECUTIVE

5. Technical or informational agriculture (fractional time) in high schools for youths of fourteen to eighteen.

6. Basic full-time or half-time farm training, home projects, or (in a few cases) school projects for boys fourteen to nineteen.

7. Full-time or half-time technical agriculture in special (often boarding) schools for boys or men from fourteen to twenty-five (recent tendencies toward winter half-year school attendance, and summer half-year home project work).

8. Full-time agricultural college non-degree work (sometimes like that of 7, above, sometimes practical specialties).

9. Full-time agricultural college-degree work, primarily technical.

10. Extension courses for experienced farmers, under agricultural college auspices (includes "short courses," correspondence courses, extra-mural courses, etc.).

OBJECTIVES OF AGRICULTURAL EDUCATION

These several forms of agricultural education—what are they for? To what extent are our aims now realized? In some cases we can answer very definitely; in others, only in terms of aspirations and beliefs.

1. **The objectives of cultural education** in the grades are yet ill defined. All agree that the schools should help children to understand their own environment. That justifies nature study, gardening, and the like for rural and village children. Probably it is important that they

learn of the environments of others. That might justify nature study in urban schools. How much? For all children, or only for those of easily kindled interests? We need more light here.

Rural school teachers have been greatly urged to "correlate" the traditional studies with projects and problems from country environment. Standards of achievement here are still vague, almost mystical. It is believed that somehow such teaching will give these children greater interest in the country, lures toward the agricultural vocations, and appreciations of the possibilities of technical agriculture. All these objectives are in need of much more extended study.

2. **Practical arts projects,** directed, or at least inspired, by interested specialists in or out of schools, for country boys from twelve to sixteen years of age, have proved very sucessful, at least in kindling and sustaining interests. Corn clubs, pig clubs, potato clubs, canning clubs, are some of the types. Under state and even national auspices, this type of educational work has had extensive trial.

Some boys get very keen vocational appreciations from this home project work. A few unquestionably gain valuable vocational powers—manipulative skills, managerial skills, technical knowledge. The prevailing pedagogy bears many points of resemblance to that of scouting. The competitive spirit is easily enlisted, perhaps at times excessively. But under its pressure the amateur spirit that is natural for this age may become a very serious working spirit. This type of education appeals almost exclusively to boys naturally keen, zealous, imaginative, ambitious. Probably most of the boys who suceeded in these projects have native qualities that almost certainly destine them to ultimate success in life under any conditions.

3. **Technical agriculture,** as an academic course in high schools, has had a mixed history. Educators have usually introduced it as a contribution toward vocational ends. The subject has lent itself well to textbook makers, many of the available texts and manuals being remarkably fine.

It is too early to evaluate achievements from this type of instruction. Probably it has no more contributed directly to vocational powers than have high-school chemistry, geometry, or commercial law. But the objectives of all high-school subjects in terms of culture or appreciation are poorly defined. Why should a good textbook course in agriculture, supplemented by some laboratory illustration, be inferior as a subject of liberal education to physics, algebra, or physical geography—especially if an elective system induces only those boys or girls to elect it who really care for that sort of thing?

Probably it is bad to try to have any school subject serve simultaneously the ends of vocational and of liberal education. Both types of objectives will almost certainly be poorly met in the process.

There are good reasons for believing that within the next few years we shall be able to give clear and fuller definition to the desirable and practicable objectives of liberal education. When that is done we can then answer this question: Can not a course in agriculture, suited to second- or third-year high-school students, be devised, which will be highly cultural, especially for city youth? Perhaps a modified form of course could be adapted for rural high schools.

4. In the colleges, too, the pedagogy of liberal education now held is clearly inadequate for the purpose of discovering the actual values of the rural sociology and other studies related to country life and agricultural productions. Since, however, these courses are usually elective, and are therefore taken by persons who presumably have genuine intellectual or social interests in them, their actual educational values may not be matters of very great moment.

The purposes of any form of vocational education must be determined, first of all, through the powers shown by the adults who now follow the vocation. The best standards can be found by studying those adults who are somewhat above the average of excellence in the performance of that vocation.

The success of any scheme of vocational training must eventually be judged also by the achievements in adult years of those trained. Even the best vocational school can contribute only part of the manipulative skills, managerial powers, technical knowledge, and vocational perspective that eventually combine in vocational success. All plans of vocational schooling will be uncertain until we learn to measure our own products.

The agricultural vocations are many. Some are of professional level, others require only physical strength and endurance. Our national program of agricultural education recognizes some of these clearly, some vaguely, some not at all. The following crude classification of agricultural vocations will help to classify the objectives of vocational schools of agriculture:

1. The professional agricultural vocations—teaching, experiment station work, analysts, county agents, etc.

2. Specialized managerial vocations on large plantations, with large herds, for farm-produce marketing, etc.

3. "Owning and working farmer" vocations, varied according to locality and according to degree of specialization of major lines of production.

4. "Tenant farmer" vocations, varied also according to region, degree of specialization of product, and perhaps social status of tenant.

5. Expert or specialized agricultural employee, wage-earning or technician service.

6. General employee service (farm hand, harvester, unskilled labor).

On certain problems of relating vocational agricultural education to the above vocations we have considerable well defined experience; and on others hardly any.

It is a fact that most of the professional workers, as defined above, are degree holders from agricultural colleges. It is also a fact that agricultural college-extension courses have become increasingly well adapted to the needs of experienced farmers, usually men over twenty-five years of age.

Degree holders also fill to a considerable extent managerial positions; but the extent to which their entrance and success in managerial work is due, on the one hand to the native excellence of the men thus selected, and, on the other, to the training actually given them in college, is uncertain.

Persons taking full-time non-degree work in agricultural colleges probably become farmers in the main. The same seems to be true of a large proportion of the more mature students taking full-time or half-time work in agricultural secondary schools.

The proportion of agricultural college graduates who become owning or tenant farmers or farm laborers seems to be small, though accurate estimates are wanting.

It is too early to judge the results from full- or half-time secondary schools of basic training. Some of their graduates will probably go to college and then enter the professions. Those who do not will probably become, eventually, owning or tenant farmers, after a period as laborers, minor partners, or in specialist service.

The actual vocational functioning of half-time or other pre-vocational technical instruction seems to the present writer still completely in doubt. As in the case of pre-vocational technical high schools, courses will often function as college preparation. Or, as in the case of commercial courses, such agricultural courses are selective of the interests and abilities destined to the farming vocations in any event. It is doubtful whether they serve the purposes of guidance, and it is never certain that they make contributions to genuine vocational competency.

Of the foregoing types of agricultural education, some are growing in importance, some declining.

Agricultural colleges are expanding both their degree work and their extension courses. Probably their non-degree residence work is diminishing. It is not unlikely that the needs of the country for agricultural leaders and specialists of professional grade are being very well met. Half-time secondary schools of basic training are expanding. Full-time residence secondary technical schools are not greatly increasing, and many of them are trying to become schools of basic training through use of home projects or correlation of courses with practical work performed in the long vacation seasons.

Pre-vocational technical courses in high schools are of diminishing importance, except in states backward in the development of basic secondary schools of farming, or where strong faith still attaches to that hybrid called "agricultural high school."

Practical arts home project work expanded greatly under war-time needs, but seems to have reached a stationary level for the time. Nature study through agriculture in the grades, as well as general technical courses in high schools, are in a bad way, not so much, perhaps, from faulty aims as from poverty of good method and aiding devices.

Several unsolved problems exist in our national scheme of agricultural education. The census of 1920 gives the number of farmers and of farm laborers in the country as, roughly speaking, six million and four million, respectively. Doubtless a large proportion of those classified as farmers were over thirty years of age; whilst a very considerable proportion of those classified as laborers were under that age.

Clearly the annual withdrawals from the farmer's vocation will approximate two hundred thousand a year. Accessions to that vocation should be even more numerous. The census does not help us to ascertain the numbers of professional agriculturists in the country in the sense here given to the term. But it is a safe guess that from two thousand to five thousand young men holding degrees are being annually accessioned to these higher callings.

The problem of first importance to us now in agricultural education is that of determining, as far as practicable, the serviceable sources of vocational training for the farming callings. Is it to be expected that during the next twenty-five years the agricultural colleges can or should be expected to contribute in large measure to this supply? To the present writer there appears no more good reasons for looking to vocational schools of collegiate grade to supply us with new farmers than for looking to corresponding schools for supplies of trained carpenters, cooks, coal-miners, and machinists.

The greatest present need of America (in agricultural education), as the present writer sees it, is the widespread development of very practical agricultural schools of secondary grade within daily reach of farmers' sons from fifteen to twenty years of age. A state like Ohio should probably have three or four hundred such schools. They can be economically administered with as few as fifteen pupils in average attendance, since most of the needed equipment, except books, will be found on the boys' own farms. At least half of the pupils' working time, preferably for twelve months, should be spent in the execution of comprehensive, money-making home projects, inspired and guided by the teacher. Pedagogical formulations for this method are now well defined, although many educators still feel the need of inducing, if not indeed requiring, the carrying of parallel cultural courses, instead of the better plan of insuring the completion before entry upon vocational training (as do all efficient professional schools) of an amount of general schooling adequate to learners' powers, interests, and future needs. Too often educators still yield to the vicious practice of trying to have practical vocational training counted for credit toward college admission, thus entailing a very academic character on the so-called vocational training.

But progress is being made. Educators are increasingly recognizing the futility, for persons of average intelligence rating at least, of extensive pre-vocational technical instruction in agriculture. The home project method, with its insistent contributions to managerial powers, is being widely adopted.

A second problem of first magnitude at present remains to be solved. Who can become successful farmers under present conditions? It is a truism that the farmer of to-day is a large capital holder, a manager, a man of commerce, and a day laborer. Like an able home-maker, he seems obligated to achieve powers everywhere else distributed among specialists.

Who can reach this stature? Suppose we take a thousand farmers' sons at random, all fifteen years of age, and subject them to the best of known intelligence tests. Before us are the farm-owning or tenant-farming vocations of the Northern Mississippi Valley states. Shall we advise those rating among the lowest fourth in intelligence to strive to become farmers at twenty-six or thirty? How about those in the third quarter from the highest?

Shall we advise any of these to try to content themselves with the farm laborer's status for all their lives? Are men of less than average intelligence almost certain to break down under the load of "managing

farmer"? On the other hand, could we give the specific vocational training toward useful specialties, as we can do for corresponding men in commerce, industry, mining, and transportation? Or may it be that "intelligence," as the psychologist defines it, does not correlate at all closely with "farm management" as a competitive social order shapes it in a world of practice?

Pick-up vocational education for the farming callings has given America many strong farmers; but it has also broken and wasted uncounted others. Fathers can readily induce or compel their sons to learn many of the specific arts—of chopping, digging, and feeding—that enter into the composite vocations of farming. But they are less successful in teaching scientific principles and practice; and they are apt to overlook altogether the teaching of management.

Agricultural schools are almost invariably *technical schools only* at first—that is, they exist to impart technical knowledge, not manipulative or managerial skills. Nowhere is there less of "learning to do by doing" than in certain kinds of agricultural schools. Their faculties take for granted that the boy has had a lot of practical experience before coming; or that he will get it in abundance when he returns to work. Some boys succeed fairly well on such a program—probably the boys who would easily succeed anyway because of their inherent abilities and enthusiasm for results. But technical schools of farming are of doubtful service to youths of average abilities if they devolve upon their learners no comprehensive responsibilities for learning management and superior techniques under trained directors.

Hence the marked tendency, in recent years, to invent true "vocational schools" for the various species of agricultural callings. In these it is planned that students shall do much "practice"—either on land and with live stock owned by the school, or on home land. But manipulative practice is not enough—much "headwork" is also necessary. In some expensive schools farm managers and teachers do most of the planning and take most of the responsibility, leaving the students to execute orders, to follow directions. This procedure might not be bad if the primary purpose were to train farm laborers. But that vocation is not a popular one in America.

The home project school of farming of which good examples are now found in several states, seeks from the outset to throw upon the pupil manipulative and managerial responsibilities proportionate to his age, experience, and strength. He starts with a project—not a toy project, but one large enough to net him a return for labor and management not less

than fifty dollars a year and preferably one hundred and fifty dollars, if he is sixteen years old and not obliged to give time to his father's work.

From the beginning he is a farmer—on a boy-sized farm, of course. He rents land, orchard trees, or enough live stock. He plans his year's work, keeps accounts, and takes each successive step on his own responsibility, after having consulted his teacher and read sufficient references to know what he is about. His project continues until he has finally marketed his product, turned back his rented equipment, and squared his accounts.

A boy giving his full time to such a project has altogether available some twenty-four hundred hours in a year. It is probably well that he should plan a project of sufficient magnitude to take twelve hundred hours of manual labor—the equivalent of four hours a day for three hundred days. This would leave twelve hundred hours for technical study, laboratory work, visitation, travel to school headquarters—since the farm or barn is part of his "school." Of course, time distributions must be very flexible, according to project. A dairy project might require three and one half hours each day for three hundred and sixty-five days. A poultry project might require time at the rate of two hours daily for three hundred days, and eight hours daily for sixty days. Tillage projects might require no manual labor during some months, and eight hours daily during planting, tillage, and harvest times.

Though the home project method is still somewhat experimental, there can be little doubt of its superiority over all other methods for mechanically minded boys of fair to good native abilities. It is the only method that insures maximum apperceptive readiness for "related technical knowledge." It utilizes to the maximum the motive of gain through productive work—the real economic motive.

The paralyzing affliction of this type of school just now is its ambition to be high school and vocational school, too. It wants to keep its cake and eat it too. It has, naturally, little social prestige by itself as yet—just as the "alfalfa" students had in state universities a generation ago. So the parents of its pupils, its pupils, and its teachers, in a few cases, want it to shine in the reflected luster of the liberal high school. Colleges of agriculture, journalism, business administration, even engineering, and especially teaching, have wrestled or are still wrestling with the same misguided ambitions in connection with liberal arts college education. Even educators who would scorn to ask that a student applying for admission to a college should be given substantial "entrance credits" for his expertness in barbering, carpentry, or locomotive driving, are found urging

such credit for students who have had a year or more of training toward a specified farm vocation.

The only safe and sane course comprehensible by the present writer is that the school of liberal, and the school of vocational, education should have *no concurrent pedagogical interdependence.* It can not ordinarily profit a boy or a man to try to get *working-time vocational and liberal education simultaneously,* any more than it can profit a man to try to conjoin vocational duties and cultural interests within the same hours of the working day.

This language must be carefully interpreted. It does not infer cessation of all cultural education; but it puts this outside of vocational working hours. Every wholesome person at any age is expected to divide his waking time among work, civic duties, various forms of intellectual and physical recreation, and further personal culture. Every normal person is expected to devote his full best working time from the age of six at least to fourteen, for many to sixteen or eighteen, and for a few to twenty or twenty-two, to the getting of general or liberal education.

The boy of seventeen is one of these persons. If, after ten or eleven years of general or liberal education, he elects to stop and thenceforward give his full working hours for one or two years to vocational education, no one should forbid or discourage him, any more than they would if he, with his parents' approval, wanted to go to work for wages.

But, of course, he should be encouraged and assisted to keep up his out-of-working hours culture, recreations, further development,—just as his seniors do,—whether he be working for wages or working in the full-time vocational school.

Again, if a boy at fifteen or eighteen, or even twenty, who is interested in more full-time liberal education, is also allured to the vocational school, he should, of course, be advised to continue in the general high school as long as he can safely do so without imperiling his chances for a necessary minimum of systematic vocational training.

The vocational school of farming, and the liberal high school, should not be pedagogically interdependent concurrently for the same pupil, as said above. Of course, these two schools can, and probably should, utilize the same building, possibly at times the same means of transportation. But they should not have the same courses, the same books, the same library, the same laboratories, the same school hours, the same teachers, or the same principal. The objectives of the two types of schools are as fundamentally unlike (when adequately determined) as are the objectives of a college of medicine and a college of liberal arts, as a school of

carpentry and a liberal arts high school. Faculties, working hours, working conditions, are fundamentally different. Do not let us forget that the vocational school of agriculture is not at the school building; only part of it, and the minor part at that, is there. The major part is at the barn, out in the field, or in the poultry yard, where the student is chiefly learning *farming*.

Of course, the college preparatory and other full-time high-school pupils and the vocational-school pupils should come together in out-of-work hours, in dances, visiting, reading, and all the rest, just as should high-school pupils and their wage-working sisters and parents. The two schools should not join in day-time athletics or sports, since people in productive work do not do it that way. Perhaps Saturday afternoons can be reserved as a leisure time for prospective and actual farmers. Do medical colleges have football teams? Do engineering students spend many afternoons on baseball fields?

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CHAPTER XXVIII

COMMERCIAL VOCATIONAL EDUCATION

INTERPRETATIONS OF EXPERIENCE

THE commercial or business vocations, it is well known, stand higher in popular esteem than do the industrial or agricultural vocations. They are "clean" callings, they require "head" rather than "hand" work, and they seem the most promising road to business leadership and fortune. "Big business" presents spectacular and alluring aspects to every ambitious man—and, in these latter days, to some women. Many business vocations offer peculiar opportunities to those young men who are endowed, or have acquired, superior powers of "self-help" or self-education.

Like the industrial vocations, those of business are greatly differentiated and specialized. In any city are to be found behind counters hundreds of kinds of salespeople—from those selling soda drinks and ribbons, to sellers of furniture and machinery. Hundreds of kinds of "field salesmen" travel our railroads incessantly—selling cigars or bonds, books or life insurance.

Modern offices differentiate many kinds of clerks—bookkeepers, stenographers, file clerks, mailing clerks, and scores of others.

"Business men" head nearly all kinds of corporation production—from coal mines and railroads to department stores and factories. They are organizers and executives partly by virtue of their knowledge of finance. Large proportions of the graduates of the older endowed colleges now seek their careers in this business world. They are willing to begin on low levels; but their goals are the commanding positions created by modern trade, finance, and corporate production.

Women enter the commercial vocations in constantly multiplying numbers. Clerkships and counter salesmanship are usually regarded as "light" vocations; they are carried on indoors; they permit, or even require, clean and attractive dressing, and they promote agreeable social contacts. Indoor salesmanship should become "woman's work" no less than nursing or the teaching of small children.

1. What intellectual and moral qualifications seem to you essential for moderate success as: a retail grocer; a lawyer's stenographer; a stock broker; a restaurant cashier; a shoe salesman; a life-insurance salesman; a bookkeeper?

2. What commercial vocations are readily accessible to bright girls from sixteen to twenty years of age? Which of these seem to you to exact: su-

perior penmanship; superior spelling; superior English speech; a knowledge of Spanish; superior knowledge of arithmetic?

3. Recall certain "business leaders" at ages forty to sixty of whom you have some knowledge. What have been some of the stages in their ascent to eminence? Have they been men and women of exceptional endowment? Have circumstances peculiarly favored them?

4. What explanations can you give for the fact that few women have risen to business prominence, notwithstanding the large numbers that during the last fifty years have entered the lower ranks?

THE COMMERCIAL VOCATIONS

The Commercial Vocations given by the census of 1920 were as follows:

TABLE SHOWING MEMBERSHIP OF THE COMMERCIAL VOCATIONS, 1920 (U. S. CENSUS)

	TOTAL	MALE	FEMALE
All Occupations	41,614,248	33,064,737	8,549,511
All commercial occupations	7,369,520	5,275,612	2,093,908
Trade	4,242,979	3,575,187	667,792
Bankers, brokers, and money lenders	161,613	156,309	5,304
Clerks in stores	413,918	243,521	170,397
Commercial travelers	179,320	176,514	2,806
Decorators, drapers, and window dressers	8,853	7,698	1,155
Deliverymen	170,235	170,039	196
Floorwalkers, foremen, and overseers	26,437	22,367	4,070
Inspectors, gaugers, and samplers	13,714	12,683	1,031
Insurance agents and officials	134,978	129,589	5,389
Laborers in coal and lumber yards, warehouses	125,609	124,713	896
Laborers, porters, and helpers in stores	125,007	116,602	8,405
Newsboys	27,961	27,635	326
Proprietors, officials and managers (n.o.s.)[1]	34,776	33,715	1,061
Real estate agents and officials	149,135	139,927	9,208
Retail dealers	1,328,275	1,249,295	78,980
Salesmen and saleswomen	1,177,494	816,352	361,142
Undertakers	24,469	23,342	1,127
Wholesale dealers, importers, exporters	73,574	72,780	794
Other pursuits (semi-skilled)	67,611	52,106	15,505
Clerical Occupations	3,126,541	1,700,425	1,426,116
Agents, canvassers, and collectors	175,772	159,941	15,831
Bookkeepers, cashiers, and accountants	734,688	375,564	359,124
Clerks (except clerks in stores)	1,487,905	1,015,742	472,163
Messenger, bundle, and office boys and girls	113,022	98,768	14,254
Stenographers and typists	615,154	50,410	564,744

[1] U. S. Census abbreviation for "not otherwise specified."

Commercial education in the United States originated in private schools of penmanship and bookkeeping, which were found to be very profitable financial ventures nearly three quarters of a century ago. By the last decade of the nineteenth century these private schools, catering to very real vocational interests, had more than one hundred thousand students. From that time our public-school departments of commercial education competed sharply with them, and attendance on these public-school departments has grown with extreme rapidity. It is probable that states and municipalities now contribute considerably more of public funds to commercial education than both states and the federal government (under the "Smith-Hughes Act") contribute to agricultural, industrial, and home-making vocational education of secondary grade.

Do commercial departments and schools, as now carried on, give genuine vocational education? Private schools unquestionably endeavor to do so, simply as sheer business policy. Public schools have usually tried to avoid giving specific vocational training, in their preoccupations with cultural or general education. They have wished their pupils to take fairly full programs of general studies besides the so-called commercial studies.

The result is that commercial curricula, as found in departments of regular high schools, or in high schools of commerce, are technical rather than vocational. Furthermore, the technical studies are blended with non-vocational studies, such as general English-language courses, algebra, and sometimes history.

Frequently, also, students are required to take technical studies that relate to other vocations than the one they are likely to follow. Girls expecting to become stenographers have, in many cases, been required to take bookkeeping and a foreign language—studies that might have vocational pertinency for *some* students, but not for them.

Nevertheless in some high schools girls are now given what amounts to fairly definite preparation for the trade of typist-stenographer. Employers can expect candidates to bring a fairly well standardized preparation in skills and essential technical knowledge.

The future of commercial vocational education seems now fairly clear, partly as a result of several inquiries or surveys of the commercial vocations that have recently been made. These seem probable tendencies:

1. Recognition not only of the large variety of commercial vocations now followed by men, women, and youths, but also of the highly variable demands they make for native abilities, general education, and specific training. Some are appropriate only for the levels of ability that can readily complete a college education; others can be followed by persons

who can barely enter a high school. Some can be entered only in mature years, others can be well undertaken by juveniles.

2. Abandonment of purely technical courses of instruction, except possibly for persons of very superior mental powers; and substitution for these of practical, intensive *training* courses, based as far as practicable on productive work. For "junior" office vocations and for many types of highly differentiated salesmanship, it is probable that training courses of ninety to one hundred and twenty days may be found amply sufficient. Other office vocations and the more complex forms of salesmanship will probably prove to be essential "upgrading" or "promotional" vocations—to be prepared for after the candidate shall have had substantial amounts of practical experience on other or lower levels. This procedure is followed now, but without well defined purpose, in the preparation of business executives.

3. The vocation of stenographer-typist has not only developed enormously in recent years, but there now exist several well defined grades of demand. Therefore schools may be expected, first to regularize their specific training for this vocation, and second to certificate their vocational graduates according to grade of proficiency actually reached.

4. It will probably be found that "secretarial" positions, properly so called, are essentially upgrading vocations, for which it may be of doubtful value to give extensive pre-vocational technical instruction.

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CHAPTER XXIX

HOME-MAKING VOCATIONAL EDUCATION

INTERPRETATIONS OF EXPERIENCE

THE family life of all civilized peoples centers in homes. These are the essential nurseries of children and the abiding places of monogamous adult pairs. No effective substitute for the home as an agency for the effective rearing of children has yet been devised. Asylums, boats, hotels, and boarding schools are utilized under special conditions, but childhood rarely comes to good fruition in them.

Women, and especially mothers, are the natural custodians and educators of children. Hence all peoples strive to realize those kinds and degrees of stable residence and economic prosperity which will enable mothers to stay with, and primarily to work for, their children. The men of the family are expected to be "outworkers"—to work away from the home, and bring back to it money or other valuable product sufficient to meet financial needs.

When men must give much of their time to war, or when men are generally irresponsible and pleasure loving, mothers are often obliged to work away from the home, and also to give their children such care as they can. In Europe this condition has long prevailed; it prevailed largely among negroes recently freed from slavery; whilst industrial disease and instability is responsible for much of it in America. But what we like to think of as the "American" home is strongly opposed to "outwork" for wages by married women. They are expected to give all their time to "in-work" with children and the home needs of working adults.

All adults have had abundant experience with homes, hence they will find ready answers to many of these questions:

1. Describe the "vocational" activities of your mother. In what respects had these been learned imitatively as "practical arts"? In what respects were they essentially "applied science"?

2. In what respects are these "homes": hotels; sleeping cars; barracks; orphanages; palaces; prisons? Would you prefer a child to be "brought up" in a good city apartment or on a small farm, assuming that in the first case his father works away from home each day, and that in the latter his father is near by at work? Would you decide differently for boys and for girls? Is the modern urban home well designed for children? Why?

3. Does the wage-earning work that the great majority of women now

do for some years prior to marriage contribute, in your estimation, good or bad effects toward their later home-making vocations? Separately consider: teaching; nursing; domestic service; factory work; stenography; laundry work; factory dressmaking.

4. Suggest essential differences in the home-making vocation according as the woman: (*a*) has an income for home purposes of six to ten thousand dollars a year; (*b*) has only fifteen hundred dollars; (*c*) has one or two children; (*d*) has six or seven children.

CERTAIN PROBLEMS

The rapid evolution of home economics studies in content and in popularity during the last thirty years is familiar. Owing to the general acceptance of the Smith-Hughes Act by the states, as well as to other causes, home economics education is still in a state of very rapid evolution. The country is presenting certain new demands, not always very articulate, which deserve full consideration in the near future. These demands come under three heads: (*a*) for clear definitions of objectives toward which various kinds of courses may be provided; (*b*) for a larger proportion of practical training in courses expected to give vocational powers; and (*c*) for development of appropriate specific aims and methods for non-vocational courses designed to give vision and appreciation as to home and family life and the woman's responsible place therein.

Research is still needed in these directions:

a. Systematic studies of the home-making vocations through application of the methods now known as "job analysis."

b. Illustrative examples of very practical training of "all-round" teachers of home-making for strictly vocational schools.

c. Studies of the social conditions determining the best time of life for the study of vocational home-making.

d. Demonstrations of various types of practice work for girls or women being trained as home-makers.

e. Systematic research designed to discover the specific objectives and methods appropriate to "liberal" (non-vocational) studies of home economics, in junior high schools, senior high schools, and colleges respectively.

The vocation of home-making can, obviously, be analyzed and defined at first only in terms of practices now found. In round numbers, from eighteen to twenty million adult women are now "full-responsibility" home-makers in the United States—chiefly as non-wage-earning wives

and mothers; whilst about one and one half million girls (over sixteen) and women are "assistant home-makers" on full time—and chiefly as domestic servants for wages.

But the vocation of home-making differs from all others in the grades of intelligence (as the term is used by psychologists) found in it. Medicine, elementary-school teaching, stenography, and the like, take only persons of superaverage intelligence. Factory work enlists chiefly girls of low intelligence. "Full-responsibility" farming claims increasingly only those of at least average, or of superaverage, intelligence, although rarely the very superior.

But custom and law permit and encourage women of all grades of intelligence to marry, to direct homes, to rear families, and to carry on all functions of home-making. Hence it seems utterly futile to discuss home-making in terms of uniform standards. If the distribution of intelligence among potential home-makers be the same as that of the fifteen hundred thousand soldiers who took the army tests, then we should expect 10 per cent. to rate as very inferior, 22 per cent. inferior, 22 per cent. low average, 21.5 per cent. as average, 13.5 per cent. as high average, 7.5 per cent. as superior, and 3.5 per cent. as very superior. (This distribution does not include the self-selected "superior" men who went to officers' training camps, nor the morons who were excluded by local examining boards; hence is of suggestive value only for comparison.)

It is possible that under urban conditions (and, some social workers assert, rural as well) most of the victims of "very inferior" intelligence become vagrants and do not found homes. Possibly a considerable proportion of the "very superior" now elect celibacy. Nevertheless it should be evident that the range of intelligence entering home-making is greater than in any other distinctive vocational field. The range of their potentialities for training must, therefore, be no less great. Probably more than one fourth of all home-makers in America for the next century could not qualify to enter a typical high school, even if they gave years to the task.

Substantial proportions of these women of less than average intelligence will become relatively "good" home-makers, if we may judge by the mothers of the "Boys of '76, 1861, 1917," or by the mothers of the settlers of our colonies and western frontiers. Many a black "mammy" became a good cook, nurse, or chambermaid, under systematic training in slave days, even though her I.Q. was probably not high.

Hence we must lay foundations for programs of vocational home-making education (and appreciational or liberal as well) by processes of

"job analysis" applied to successful examples of homes kept by persons of different grades of intelligence, further differentiated by environment (rural, urban, etc.), racial conditions, economic resources, etc. For each of these we can define "optimum" present standards, after which we can proceed to ascertain numbers now falling below these standards, advances that should be made in the next generation, etc.

The most serious difficulties to be encountered in doing this are not in disentangling the "strands" of the composite vocation called home-making, but in determining what, in some quantitative sense and for given levels of ability and opportunity, are "optimum" standards of performance powers to be expected. In many vocations job analysis is to-day made reasonably scientific by the fact that easily defined measures of quality and quantity of output are obtainable—*e.g.*, machine-shop, printing, tailoring, coal mining. In other cases, as farming, the market value of product is a serviceable measure. But the products of home-making are not sold in the markets, and only a few of these—bread, clothing, etc.—are to be measured by performance standards used elsewhere. Many of the most essential products—child care, management, etc.—are as yet quite unmeasurable.

Nevertheless systems of standards can be devised by methods now familiar to the statistician. Their development will necessarily be laborious. In the meantime, common sense should be used to the utmost to correct the subjective standards, often fancifully extravagant, imposed by the technical specialists in all departments of home-making, as well as by the practical specialists in needlework. Because the good home-maker is expected to preserve health and sanity, it is futile to expect that in her highly composite vocation she can be as good a cook as a hotel chef, as good a seamstress as a trade dressmaker, or as good a caretaker of the sick as a trained nurse. Some progress has been made in developing practicable valuations in recent years; but nevertheless the effect of specialization in large schools and in the training of teachers is yet undoubtedly heavy in the direction of excessive emphasis upon special technical knowledge and skills.

Much uncertainty seems still to exist relative to the educative possibilities of home experience, either during girlhood or after marriage. Since school courses in home economics have heretofore been almost exclusively technical (or informational, and devoid of practice to give manipulative or managerial skills), it has been customary to disregard varying degrees of home experience brought by the girls. There has also

persisted the assumption that practical skills could be acquired *after* leaving school. These limitations of vocational training have long prevailed in many other fields (except nursing), and are only slowly being corrected now in normal schools, medical schools, and engineering schools.

But present demands set strongly in the direction of requiring practical work as a part, and probably a major part, of education for vocational competency in every field. The Smith-Hughes Act explicitly imposes this requirement, which is still largely evaded in home economics departments. Various attempts to meet this need are now being experimented with—practice houses, home projects, summer work. The problem should be attacked with especial vigor by all institutions training supervisors and teachers.

Home economics courses are now found chiefly in high schools. The assumptions underlying most teacher-training courses is that they will remain there. But the majority of American girls now spend several years as wage-earners before becoming home-makers. It is still very doubtful whether more than a small proportion of girls are ready, in motive or need, profitably to take vocational home-making between the ages of twelve and eighteen. As long as courses have been relatively light and academic in character, they have been elected on a parity with algebra, chemistry, and history. But realistic vocational requirements will impose new conditions affecting choice of courses. There is every sociological reason for believing that, once the way is opened, vocational home-making will be sought chiefly by persons over twenty years of age, before and after marriage. But the whole question should be carefully studied under different social situations.

It is probable that in composite vocations like home-making and general farming, where managerial powers are no less important than manipulative, the "home project" is the most promising means of giving practical proficiency, as distinguished from technical knowledge.

COURSES IN APPRECIATIONAL HOME-MAKING

The time has come to differentiate in elementary and secondary schools and in colleges certain non-vocational courses relating to the home, to constitute contributions to liberal education, and having in view chiefly the development of appreciations, ideals, and general insight.

It should not prove difficult to develop such courses for girls twelve to fourteen years of age in the junior high school, taking suggestions

from scouting, club work, and household arts. Given a little more insight on the part of faculties, such courses could also readily be developed in women's colleges, perhaps as part of the social science work.

But for girls of superior intelligence the high school is probably the ideal place for such offerings. Girls of adolescent years should prove very responsive. In fact, the chief value of the technical courses heretofore making up the subjects of home economics in high schools has been in this direction, without perhaps being wholly intended.

But the situation needs clearing up. We should have a series of articles prepared dealing with concrete possibilities. Our high schools are still fumbling after more real objectives of liberal education. The women's colleges are still mystified as to what should be the purpose of home economics (except toward the training of teachers) in their curricula.

THE HOME PROJECT METHOD

Whatever character will eventually be developed for the specific objectives of vocational home-making education, it is certain that questions of method will also be of the greatest importance. At present chief interest centers in the project method. In agricultural education of secondary grade the project method has been generally accepted as far superior, for the average student at least, to the more academic methods of textbook and laboratory on the one hand, or the more apprenticeship-like methods of routine participation in productive work, attended by study of parallel technical subjects, on the other. Home-making bears many points of resemblance to the farming vocations. It is essentially a composite vocation. Managerial powers are at least as necessary in it as manipulative. It easily breaks up into more or less discrete or separable jobs. Its related technical knowledge is to be found in at least a half-score of sciences and arts, none of which can be studied in any completeness as independent subjects by the student of average ability or available time. Hence, if the project method proves the best in agricultural education, we have every reason for believing that it can be successfully applied in home-making education.

It is not difficult to analyze out a series of possible jobs in home-making, and even to range these in orders of difficulty adapted to different girls, according to their ages and abilities. Neither is it difficult for inventive teachers, experienced in the practical aspects of home-making, to dissect these jobs into suitable stages, and thereby to isolate out for consideration the detailed procedures that should successively

be studied and practised by the learner. But it is difficult, and it becomes in reality almost one of the finest of pedagogical arts, to provide for a psychological linking up with the job, or any part of it, of the normal related technical, social, hygienic, and cultural knowledge, without which linking up the job is only a job (worth something for education in skill, of course), and not at all an educational project in the true sense of the word.

The following seem to be some of the principles of organization and procedure essential to successful project work in home-making:

Every project should have a certain magnitude based upon customary practice in the world of work. Where skills are obtained with some difficulty, sufficient repetition to carry the learner to an early point of diminishing returns (to use the economist's term) should be required. Experience seems to suggest that no project should be so small or fragmentary as to require less than six or eight hours, with necessary repetitions, nor yet so extensive as to necessitate more than sixty to eighty hours. (In agricultural education the magnitude of projects must be much greater because of dependence on "year-round" work.)

Each project should be very fully analyzed in a leaflet or booklet prepared for that case or type of learner to which a given individual most nearly approximates. The controlling purpose in the preparation of this printed analysis should be to make the student as completely independent of personal consultation with teacher or others as practicable. We aim to produce a worker who can obtain new direction and knowledge readily from printed sources—one of the most important goals of all effective education. This booklet should give constant reference in page detail to books, bulletins, and articles that demonstrably constitute related knowledge—whether in the immediate field of needed technical knowledge clearly necessary to the performance and comprehension of the project itself, or in the more remote social, hygienic, and cultural fields given significance by the project.

In most cases, in the pupil's guide to the project, it seems best to make approaches by questions—first, questions directing attention to major stages of attack on problems, and then questions enabling the student to resolve these into easy steps, capable of being worked out one by one. (This method of presentation was first used, to the writer's knowledge, by Rufus W. Stimson of Massachusetts, in connection with agricultural school projects.)

In the actual working out of a project the learner should be required to plan much in advance, to think out details, and even to make notes

or written descriptions of what she expects to do, whereon to obtain the teacher's prior approval. It must never be forgotten that a major factor in good home-making is management,—of one's own time, resources, and responsibilities, and not the services of others necessarily,—and that the central essentials in good management are prevision, forethought, prearrangement, planning—as found in the competent housekeeper of whom we say that "her head runs ahead of her heels."

The best project work for educational purposes will usually be done in the environment most nearly normal for that kind of work and for the worker concerned. Hence projects carried out in a school laboratory, a school lunch room, or even a practice house, will often be found lacking in essential elements of reality. The home of the girl or woman—her parents' home, of course, if she is unmarried—will usually furnish the most realistic conditions. Furthermore, the hours, seasons, and all other working conditions should as nearly approximate those of the world of work as can normally be arranged.

But of paramount importance is it that the project shall consist of productive work. Meals must be cooked to be eaten, beds made to be slept in, rooms cleaned to be lived in, babies cared for because the care is required, gardens improved because they need it. "Make-believe" work, exercises, unessential performances, should be sternly repressed if not prohibited. Probably in only a few cases—of which the minor division, Housing and Furnishing, offers the only instances now apparent—will it be necessary to go through the motions only of real work—to "simulate" actual useful performance as we had sometimes to do in training our men for war.

Hence the desirability of putting project work on a commercial basis wherever practicable. The useful product should bring to the worker a net return for her labor, due allowance being made to the person served for the risks and inconveniences of being served by a learner. The formidable obstacle, of course, to this payment for service is the fact that so often it will be done in homes where conditions do not normally permit the employment of paid service. Here the service must be given. But in the cases of project work done in homes where it can replace service that would otherwise be paid for, as well as in all cases where the product can be sold, a reasonable net return should come to the learner (no deduction being made for school supervision or facilities provided as part of the educational process).

Each project must be made the vitalizing center for the study of that technical or interpretative knowledge which is germane to it. Caution

must be exercised in providing that such study of related technical knowledge shall be neither too cursory nor too thoroughgoing. Teachers interested only in immediate performance will scamp on technical learning, so that their pupils will be getting the benefits of what is in reality only apprenticeship learning—chiefly unrationalized practical skills. Other teachers—and under present conditions probably the majority, at least in Foods, Laundry, and Accounting—will tend to use the practical work of the project only as a suggestion or starting point for endless and interminable excursions into the fascinating realms of technical knowledge.

Some teachers will build an entire system of bacteriology around a yeast cake and a system of chemistry about a baking-powder biscuit. But, however attractive this process to the teacher enthusiast, it is usually death, if not to the interests of her learners, at least to their powers of normal and wholesome assimilation. Obviously, much pedagogical research must be devoted to this subject before we shall be able to proceed confidently. For the present, existing textbooks and manuals should be used only for reference purposes, and sparingly and circumspectly at that.

Similarly, the fields of related social, hygienic, and cultural knowledge normally to be entered under the stimulus of project study remain as yet almost wholly unworked. Almost every good home-making project can be made a very real port of embarkation for the study of some social, health, or cultural topics or problems genuinely related to it. Some of these easily suggest themselves; others require the constructive aid of experts.

All of which suggests the very great desirability of providing for each project not only a "pupil's guide," but a teacher's guide as well. If Federal or state or other central authorities would at an early date provide detailed suggestions for teachers in booklet form for such projects as breadmaking, breakfast getting, home accounting, family garment upkeep, afternoon child care, and family laundry, they would be rendering an incalculable service. Here would be opportunity for coöperative effort in determining the kinds and degrees of technical knowledge that, for stated case groups, naturally relate to specified projects. Here could be given a wealth of suggestions for related readings, sub-projects, laboratory exercises, and oral presentations on the part of the teacher, designed to enrich and round out the project so as to make it in maximum measure educative.

Case-groups will obviously range in powers from retarded girls fourteen to sixteen years of age (quite incapable of doing regular high-school work) to women of twenty-two who have spent six or seven years in wage-earning work, or college students of equal age, with seven years of liberal

education beyond the elementary school, as well as splendid heredity and family culture behind them. Ultimately we may expect to see six or seven types of booklet on any individual project, adapted respectively to the differing needs and capacities of a half-dozen widely variant groups.

It is probable that extreme flexibility in time and order of various projects offerings should be favored until we know definitely what are the varieties of difficulty to be encountered. Certainly there are no reasons known at present why food projects should either succeed or precede clothing projects. Simple projects in accounting are just as feasible as projects in laundry and child care. In fact, in any of the five major or five minor divisions into which home-making projects are for convenience here grouped (foods, clothing, house care, laundry, child care; and accounting, care of sick, housing and furnishing, adult sociability, and yard and garden care), it would be practicable to devise simple projects that could be taken at any early stage; and it would be no less practicable in each to discover projects so complicated and exacting as to require much of maturity and experience.

Within any division we may expect experience to show us certain desirable sequences of projects, but for the present we should reserve final decisions even in these matters. The project method does offer opportunities, unequaled under any other method, of adapting work to the native powers and previous experience of the individual girl. Hence, out of a series of projects we may find it expedient to allow a capable beginner with good background of home experience to commence with a fairly complicated piece of work.

Probably we shall tend to develop, in each division, several groups of projects, each group representing a different degree of manifest difficulty. A group suitable for beginners might be designated as the "a" group (a1, a2, a3, etc.), while a group presenting difficulties that could normally be met only by learners having experience equivalent to that required by the successful performance of an "a" group project would be called the "b" group (b1, b2, b3, etc.).

What administrative organization will prove the best for home project work in home-making? Here much experimentation is necessary. Analogy with agricultural education suggests a few tentative conclusions. Much reliance can not be placed on rigidly organized class work. Ideally, any given teacher should be prepared to direct home projects in any one of the ten divisions—she should, in other words, be an all-round homemaker herself, equally competent in clothing, child care, furnishing, or food projects.

For full-time work (eight hours daily) one teacher should probably not have more than fifteen pupils if she is to preserve suitable contact with home projects. For half-time work (four hours, daily minimum) it is doubtful whether one teacher should be responsible for more than twenty-five girls. Teachers will necessarily have to adjust themselves to flexible personal schedules in order to supervise such projects as breakfast getting, evening child care, and the like. But, like many others of the workers of the world, such as nurses, street-car drivers, waitresses, and others, interested teachers will soon adjust themselves to irregular schedules, "shifts," "divided turns," and other devices where departures from traditional schedules are necessary.

For full-time students probably not more than three hours daily (for five days in the week) should be claimed for class work and joint conference purposes. One of these hours should regularly be given, doubtless, to the "related social and cultural" readings and discussions that are provided to give vision and higher appreciations as to woman's work, the possibilities of the home, etc. For these purposes inspiring books are needed. Olive Schreiner's *Woman and Labor* will be used by some to advantage. If we possessed a twentieth-century *How Gertrude Teaches Her Children,* it would fill an acute need in home-making literature. Perhaps the *Woman's Home Companion* and other similar journals will be found helpful by some teachers.

For the rest, the teacher will reserve needed time for individual conferences, sometimes in the home, sometimes in the school where pupils are doing their reading. It cannot too often be insisted that good vocational education is moving steadily toward the methods of "individual" instruction, and that pupils must increasingly be taught to rely upon themselves in reading and planning, provided specific guidance thereto is given in printed matter.

"Productive projects," it has heretofore been assumed, will be found most accessible in the girl's "own home." But it can be safely prophesied that many opportunities, and those the most excellent, will be found, once the crusts of tradition and artificial conventions are broken, in homes other than those of the girl's parents. Within easy walking distance of any college and almost every boarding school to-day are located scores of homes in which help is urgently needed—help in caring for children, washing clothes, mending, preparing and serving meals, caring for adult sick, renovating garments, helping with "parties." Here are limitless opportunities for the most effective kind of educative participation, once home economics teachers (better call them home-making teachers for the future) shake

themselves into the conviction that it is necessary to enter the water if one would learn to swim, and cultivate dispositions and ability to propose and supervise "part-time" projects among their neighbors on the part of their pupils.

In many cases it may be pedagogically very much better for the girl, especially if she be upward of eighteen years of age, to work at projects in homes other than that in which she has lived. Furthermore, these projects in other homes offer many opportunities for the partial "wage" compensation that is so desirable. On the other hand, care must be taken not to have more than a small amount of work done under the conditions created by a very different financial standard of living than that which the girl herself can reasonably expect. A series of projects carried out in a home on a $5000 yearly budget might constitute poor, if not disastrous, preparation for home-making in the case of a young woman whose prospective husband can hardly expect to earn more than nine to twelve hundred dollars a year (1914 prices).

The application of the project method in rural schools will require some modifications of plans designed to meet conditions of urban population concentration. Short-course boarding schools will in some cases be found the best solution. Intensive full-time courses not exceeding three months in length seem to the writer to represent an optimum standard.

In the case of girls living at home and coming from distant points to school, programs could and should be arranged whereunder school attendance need not be made more than two or three times weekly—the remaining days being taken for project work at home, which the teacher could arrange to inspect. It must be remembered that, because of the practical experience already obtained by the majority of country girls, their project work will take the direction of "advanced" or "extension" instruction and training. Of course, if the girl is dividing her time between liberal and vocational studies, the school attendance requirements of the former will control.

Summer projects are strongly recommended now in some states. If properly supervised, these should prove very valuable because of the opportunities they offer for concentrated experience. It is doubtful whether "credit" should be given for such work unless it can be adequately directed, and unless increments of skill and knowledge resulting from it can be definitely evaluated. Otherwise we should find it beset by petty deceptions, whilst its educative character will often be dubious.

But "summer projects" represent only a passing phase at best, just as

does the "summer camp" work of engineering colleges. The true vocational school should know no seasons and no vacations—which is not to say that individual teachers are to have no vacations. But the institutional work of the world—homes, hospitals, hotels, rail transportation, farming, factory work—goes on in all months. So must vocational school work. Where the student wishes to divide the working time of each day between liberal and vocational studies—the rather weak and inconclusive arrangement now favored by some educators who have little genuine interest in, and no adequate knowledge of, vocational education—it may prove desirable and necessary to reserve the summer months for whole-hearted participation in vocational projects. But under any full-time vocational program the requirements of the summer months should certainly not differ from those of any other months.

The extent of the home-making and other related vocations is shown by the following table:

TABLE SHOWING MEMBERSHIP IN THE DOMESTIC AND PERSONAL SERVICE VOCATIONS, 1920 (U. S. CENSUS)

	TOTAL	MALE	FEMALE
All (wage-earning) occupations	41,614,248	33,064,737	8,549,511
Home-makers (estimated)	20,000,000	.....	20,000,000
Domestic and personal service classified	3,404,892	1,217,968	2,186,924
Barbers, hairdressers, and manicurists	216,211	182,965	33,246
Billiard-room, dance-hall, skating-rink, etc., keepers	24,897	24,655	242
Boarding- and lodging-house keepers	133,392	18,652	114,740
Bootblacks	15,175	15,142	33
Charwomen and cleaners	36,803	11,848	24,955
Elevator tenders	40,713	33,376	7,337
Hotel keepers and managers	55,583	41,449	14,134
Housekeepers and stewards	221,612	17,262	204,350
Janitors and sextons	178,628	149,590	29,038
Laborers (domestic and professional service)	32,893	31,224	1,669
Launders and laundresses (not in laundry)	396,756	10,882	385,874
Laundry operatives	120,715	39,968	80,747
Laundry owners, officials, managers	13,692	12,239	1,453
Midwives and nurses (not trained)	156,769	19,338	137,431
Porters (except in stores)	88,168	87,683	485
Restaurant, café, and lunch-room keepers	87,987	72,343	15,644
Servants	1,270,946	258,813	1,012,133
Waiters	228,985	112,064	116,921
Other pursuits	84,967	78,475	6,492

FOR SUPPLEMENTAL READINGS AND REPORTS

COOLEY, A. M. *Teaching Home Economics* (Ch. 1 to 3, Objectives).
MYERSON, A. *The Nervous Housewife* (Ch. 4, Housework).
PETTENGILL, L. *Toilers of the Home* (A College Woman as Servant).
SNEDDEN, D. *Problems of Secondary Education* (Ch. 23, Problem of the Place of Home Economics). Also, *Vocational Education* (Ch. 7).

CHAPTER XXX

INDUSTRIAL VOCATIONAL EDUCATION

INTERPRETATIONS OF EXPERIENCE

THE industries, in popular usage, include manufacturing, building trades, mining, and transportation. It is also convenient here to include under this head one other large category used by the census—public service.

The industrial, like the commercial, vocations are greatly specialized. A large factory may include representatives of several hundred distinct operative vocations. A railway system classifies its operatives into scores of categories. We are told that more than a hundred different workers may contribute to the making of a shoe. Even housebuilding, bookmaking, and breadmaking have become enormously specialized.

But specialization takes place at the top as well as at the bottom. Superintendents, treasurers, inventors, designers, technicians, salesmen, are all differentiated in the productive force of a large factory or mine. Such an institution is apt to have places for a very genius of an inventor as well as for a semi-moron porter or digger. It can use the labor of fifteen-year-olds or of ripened executives.

Vocational education for the industrial callings is a highly complex matter. In some, apprenticeship has prevailed for thousands of years—brick and stone building, forging, and some other forms of metal working. Highly organized vocational schools now give us engineers, technicians, and designers. But the rank and file of factory workers are the victims of the crudest forms of pick-up vocational education—and there are persons, even of much insight, who claim that they neither need nor deserve anything better.

Every reader of this book has long been in, but probably not of, an industrial environment. He has been an employer of the services of railways, steamboats, telephone systems, hotels, housebuilders, electricians, newspaper makers, textile factories, shoe factories, and the like. His tableware, furniture, coal, lead pencils, textbooks, buttons, and hats have been largely products of "modern industrialism." He has seen at some distance belching chimneys, crowds of begrimed workers, and miles of workers' tenements. He has read of strikes, panics, and torrential immigration. He knows that the world is uneasy about "industrialism," but has little settled policy as to its future.

1. Does it seem to you that "power production" is a "good thing" for humanity? Separately consider: steam railways, power-driven drills and explosives in mining, machine weaving, power-sawn lumber, tractor-driven

plows, electrically driven metal working lathes. What proportion of the things on and around you, as you work, are power-machine products—shoes, clothes, books, furniture, wall finishings, pens, paper, and the like?

2. Does "power production" make larger populations possible? Higher standards of living? More work for men of "low-grade" intelligence?

3. Thinking of *all* the men who build and operate railroads, mine coal, make newspapers, erect brick buildings, produce shovels or cotton cloth, and manufacture steel, what seem to you the proportions of really unskilled, semi-skilled, highly skilled, and technically educated men and women needed?

4. Recall certain workers, thirty or more years of age, in the callings mentioned below, then estimate the means and stages by which they reached their present vocational proficiency: bricklayers; carpenters; locomotive engineers; milliners; cooks; plumbers; tailors; coal-miners; janitors; policemen; waitresses; sailors.

THE INDUSTRIAL VOCATIONS

The industrial vocations, as given by the census of 1920, were these:

TABLE SHOWING MEMBERSHIP IN THE INDUSTRIAL VOCATIONS, 1920 (U. S. CENSUS)

	TOTAL	MALE	FEMALE
All occupations	41,614,248	33,064,737	8,549,511
All industrial occupations	17,742,789	15,574,736	2,168,053
Extraction of minerals	1,090,223	1,087,359	2,864
Foremen, overseers, and inspectors	36,931	36,923	8
Operators, officials, and managers	34,325	34,143	182
Coal-mine operatives	733,930	732,441	1,495
Copper-mine operatives	36,054	35,918	136
Gold- and silver-mine operatives	32,700	32,666	34
Iron-mine operatives	38,704	38,605	99
Operatives in other and not specified mines	41,389	41,282	107
Quarry operatives	45,162	45,084	78
Oil, gas, and salt well operatives	91,022	90,297	725
Manufacturing and mechanical industries	12,818,524	10,888,183	1,930,341
Apprentices to building and hand trades	73,953	73,897	56
Apprentices to dressmakers and milliners	4,326	17	4,309
Apprentices, other	65,898	60,532	5,366
Bakers	97,940	93,347	4,593
Blacksmiths, forgemen, and hammermen	221,421	221,416	5
Boiler makers	74,088	74,088	.....
Chemical and allied industries, general labor	74,289	70,994	3,295
Cigar and tobacco factories, general labor	35,157	21,295	13,862
Clay, glass, and stone industries, general labor	124,544	120,215	4,329

TABLE SHOWING MEMBERSHIP IN THE INDUSTRIAL VOCATIONS, 1920 (U. S. CENSUS) (*Continued*)

	TOTAL	MALE	FEMALE
Clothing industries, general labor	12,776	6,414	6,362
Food industries, general labor	159,535	143,397	16,138
Harness and saddle industries, general labor	1,885	1,727	158
Iron and steel industries, general labor	729,613	717,022	12,591
Other metal industries, general labor	67,887	62,771	5,116
Lumber and furniture industries, general labor	320,613	309,874	10,739
Paper and pulp mills, general labor	52,263	49,786	2,477
Printing and publishing, general labor	11,436	8,886	2,550
Shoe factories, general labor	19,210	14,194	5,016
Tanneries, general labor	27,480	26,703	777
Textile industries, general labor	170,553	134,905	35,648
Other industries, general labor	463,891	426,398	37,493
Loom fixers	15,961	15,958	3
Machinists, millwrights, and toolmakers	894,662	894,654	8
Managers and superintendents (manufacturing)	201,721	196,771	4,950
Manufacturers and officials	231,615	223,289	8,326
Mechanics (n.o.s.)[1]	281,741	281,690	51
Millers (grain, flour, feed, etc.)	23,272	23,265	7
Milliners and millinery dealers	73,255	3,657	69,598
Molders, founders, and casters (metal)	123,681	123,668	13
Oilers of machinery	24,612	24,568	44
Painters, glaziers, varnishers, enamelers, etc.	323,032	319,697	3,335
Paper hangers	18,746	18,338	408
Pattern and model makers	27,720	27,663	57
Plasterers and cement finishers	45,876	45.870	6
Plumbers and steam fitters and gas fitters	206,718	206,715	3
Pressmen and plate printers (printing)	18,683	18,683	.....
Rollers and roll hands (metal)	25,061	25,061	.....
Roofers and slaters	11,378	11,378	.....
Sawyers	33,809	33,800	9
Chemical and allied industries, semi-skilled	50,341	32,072	18,269
Cigar and tobacco factories, s.s.[2]	145,222	61,262	83,960
Clay, glass, and stone industries, s.s	85,434	72,269	13,165
Clothing industries, s.s	409,361	143,718	265,643
Food industries, s.s	188,895	116,493	72,402
Harness and saddle industries, s.s	18,135	17,573	562
Iron and steel industries	689,980	632,161	57,819
Other metal industries, s.s	91,291	60,844	30,447
Lumber and furniture industries, s.s	168,719	150,079	18,640
Paper and pulp mills, s.s	54,669	41,321	13,348
Printing and publishing, s.s	80,403	39,281	41,122
Shoe factories, s.s	206,225	132,813	73,412
Tanneries, s.s	32,226	28,598	3,628

[1] Not otherwise specified.
[2] Semi-skilled.

TABLE SHOWING MEMBERSHIP IN THE INDUSTRIAL VOCATIONS, 1920 (U. S. CENSUS) (*Continued*)

	TOTAL	MALE	FEMALE
Textile industries, s.s.	872,391	388,978	483,413
Other industries, s.s.	622,662	410,256	212,406
Shoemakers and cobblers (not in factory)	78,859	78,599	260
Skilled occupations (n.o.s.)	19,395	19,326	69
Stonecutters	22,099	22,096	3
Structural iron workers (building)	18,836	18,836	.....
Tailors and tailoresses	192,232	160,404	31,828
Tinsmiths and coppersmiths	74,968	74,957	11
Upholsterers	29,605	27,338	2,267
Transportation	3,063,582	2,850,528	213,054
Water transportation (selected occupations)	173,399	173,009	390
Road and street transportation (s.o.)	1,121,930	1,119,136	2,794
Railroad transportation (selected occupations)	2,217,122	2,198,978	18,144
Express, post, telegraph, telephone (s.o.)	463,678	266,555	197,123
Other transportation pursuits	353,482	348,106	5,376
Public service	770,460	748,666	21,794
Firemen (fire department)	50,771	50,771	.....
Laborers (public service)	106,915	105,385	1,530
Marshals, sheriffs, detectives, etc.	32,214	30,968	1,246
Officials and inspectors (city and county)	55,597	50,748	4,849
Officials and inspectors (state and U. S.)	80,334	67,944	12,390
Policemen	82,120	81,884	236
Soldiers, sailors, and marines	225,503	225,503	.....
Other pursuits	21,453	20,309	1,144

The mechanical industries include many in which historic apprenticeship survives—masonry, carpentry, plumbing, and some other building trades; printing; machine-shop work; certain forms of railroad service; and some others. But study of the list as given will show that a large proportion necessarily get only pick-up training, and that under even less advantageous conditions than are found on farms or in homes.

PROBLEMS OF INDUSTRIAL EDUCATION

If widely developed industrial education in schools is to be provided, certain difficult problems of objectives, administration, and method await solutions. Among them are these:

1. **Where shall vocational schools be located?** There are literally thousands of these industrial vocations. In many cases, one school for a

state or for a group of states would suffice. Clearly, such schools can be accessible to homes of young learners only in those cases where specific industries are highly concentrated—as wool weaving in Lawrence, collar manufacture in Troy, pottery making in Trenton, and automobile manufacturing in Detroit. It is doubtful whether we should expect towns or municipalities to take the initiative in providing such schools. Rather must they be state and national enterprises—as are now most professional vocational schools.

2. **Where shall productive work be done?** It is now generally conceded that nearly all forms of sound vocational training must proceed through, and largely by means of, practice on commercially productive work. Especially is this necessary in the industrial vocations where manipulative skills bulk large.

Heretofore some industrial schools have organized their own productive work. Schools of carpentry have built houses. Electrical schools have taken up the repair work of the school buildings of a city. Schools of printing have supplied state and municipal offices with forms. Schools of power-machine operation (on clothing) have marketed a product.

But these are, at best, precarious and difficult methods. They compel the schools to enter the world of business, and commonly on too small a scale to insure real success.

The alternative is part-time participation in the work of commercial factories, mines, railways, and the like. But there are several kinds of part-time arrangements. In some the student is first an employee, responsible for a certain value of output. His practical work may or may not be related to his technical studies. In evening and continuation schools it is rarely so related.

Ideally, part-time productive work, to be fully educative, should be in a measure under control of the school authority. The latter should direct the use of the pupil's time, the sequences of his tasks, and the grading of performances. The commercial agency—employer, manager, producer—should, of course, control product, tools, and marketing. Certainly no employer should suffer financially for his part in the educative process. He must be assured a normal financial return, even if under some conditions the school authority pays for space, machines, and materials consumed by learners. But ordinarily a small net wage can be commanded practically by learners.

Such a scheme would be a state-controlled apprenticeship, employers coöperating. In effect, that is the scheme of vocational education under which nurses now obtain their training. The vocational education now

developed for physicians and engineers in the later stages of their training also substantially follows that principle.

The success of part-time work of this character obviously depends largely on skilful and tactful coördination—in fact, professional coördinators are essential as part of the teaching force. Only thus can there be effective integration of skill-producing practice and knowledge-producing technical studies. Only so, too, can the whole scheme give as essential by-products appropriate vocational appreciations and ideals.

3. At what ages shall industrial education be given? Educators, accustomed to a social situation that seeks completion of school before life-work is begun, expect too simple answers to the above question. Under some conditions, industrial education should begin at fifteen; under others, thirty may be too young.

It is essential to grasp the full significance of the numberless vocational levels in modern production. Probably half, at least, of the positions on a modern railway or in a large factory are not and ought not to be entered by workers under twenty-one or even twenty-five years of age. But there are many other specialties for which an age of sixteen amply suffices.

Vocational education for any calling should, manifestly, be commenced as nearly as practicable on the eve of probable entrance thereto. If certain kinds of work are normally open to persons sixteen years of age, let specific vocational training be made available six months or one year before that time. Certainly we should not permit a sixteen-year-old to begin training for a trade or operative vocation like that of locomotive engineer, which is normally open only to men of maturity.

In other words, a large proportion of "functioning" industrial education must be "upgrading"—that is, designed to "lift" the learner, now that he has become properly mature and experienced, to higher levels, either of proficiency within the vocation heretofore followed, or in some other. The factor of selection will, of course, play a part here. Possibly, in many industries, those men who at twenty-five have shown most understanding and executive ability, should be given special training toward foremanship.

FOR SUPPLEMENTAL READINGS AND REPORTS

ADAMS, H. C. *Description of Industry* (see contents).
ALLEN, C. R. *The Instructor, the Man, and the Job* (Ch. 1-8, Aims).
ALLEN, F. J. *The Shoe Industry* (Ch. 2, Shoe Machinery).
CLAY, HENRY. *Economics* (Ch. 2, The Division of Labor).

LEE, F. S. *The Human Machine* (Ch. 6, Length of Working Day; and Ch. 9, Labor Turnover).

LINK, H C. *Employment Psychology* (Part III, Selection and Retention of Workers).

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CHAPTER XXXI

PHYSICAL EDUCATION

INTERPRETATIONS OF EXPERIENCE

IT is probable that among the first "schools" that barbarians emerging into civilization organized were those designed to train fighters—since fighting was the chief vocation of the aristocrats. These naturally give much attention to physical training—on the one hand for strength, agility, and endurance, and on the other for grace and virile beauty, since the latter were tangible assets to conquerors and commanders.

But schools evolved since the invention of printing have given place very grudgingly to physical education. English boarding schools have permitted, often encouraged, physical sports. But probably their faculties looked upon these rather as helps to discipline than as essential means to bodily development.

Modern physical education began largely with instruction in physiology and hygiene—which for many years was much more physiology than hygiene. Now the theories of educational aim held by most progressive educators give prominent place to "health education" and "physical training." Our ideals are now right enough; but we have only a few adequately defined objectives. When we reflect, we realize that many factors in a broad scheme of physical education can be supplied only by the home or other outside agency, the school lending encouragement and advice. But not a little of the "aspirational" educational literature of recent years seems to ignore the fact that in many respects the school can serve only as a "residual" agency—especially in nurture, physical development, and hygienic practice The best starting point for study of the actual situation is analysis of the experience of each one of us:

1. In what respects is your present "physical development" now fairly adequate? Separately consider: size of chest, arms, neck, hands; basic coördinations for running, walking, jumping, climbing, throwing, crawling; endurance —in physical work, in mental work; grace and beauty of person; regular and adequate functioning of heart, lungs, digestive tract.

2. As respects which of the above parts or functions do you consider your "physical development" inadequate? Trace such inadequacies respectively to: heredity, insufficient or bad physical activities in youth, defective nutrition, lack of suitable training.

3. From what illnesses could you probably have been saved in youth if your mother had known as much hygiene as is now usually found in a seventh-grade

text in that subject? From which could you have been saved if you had been taught more hygiene?

4. What "working conditions" in your school life probably contributed to your physical impairment? Separately consider: eyestrain; deprivation of physical play; nerve strain; posture; ventilation; infections.

5. Assume a class of adolescents of whom it is known that all will follow teaching as a vocation. Suggest special programs of physical education for them, designed to develop, train, or otherwise prepare them for the physical strains of the teaching vocations, as men have long been prepared for the strains of war.

OBJECTIVE OF PHYSICAL EDUCATION

The conservation of health and other forms of physical well-being can be taken as the inclusive purpose or objective of physical education. Nature gives the essential foundations—in discriminating appetites for food, desires for rest, sleep, play, shelter, and warmth, and instinctive avoidance of many dangers. Social art provides many means of conserving health—foods, shelter, play, customs, and certain health habits. Experience and environmental education rapidly reinforce nature—from which the growing child learns avoidance of dangerous animals, steeps, waters and machinery, and some luring but unwholesome comestibles.

Cure of ailment has also its instinctive foundations. Sick and injured animals and human beings naturally seek rest, sleep, shelter, and diminution of metabolic functions. Even primitive medicine often sought to reinforce these, "to give nature a chance"—though sometimes the theories of magic prompted action that retarded rather than helped cure, just as the hospitals of Lister's early experience made parturition in them with medical care more dangerous than childbirth in homes with only the rough help of a midwife.

Conservation of health gradually evolves a host of family and household practices—protection from cold, varied diet, sterilizing of foods through cooking, avoidance of dirty water. Crude taboos against infected persons, and modesty as a means of repressing or postponing prematurity of sexual interests, are among these.

In advanced barbarian and civilized societies the general objective of physical education is resolved into several specific objectives. Therapeutic arts and the science of medicine evolve in the hands of specialists. Certain kinds of quarantine develop. The arts of war and hunting are so clearly competitive and their success depend so much upon physical readiness and preparedness that a host of forms of preliminary training of a more or

less physical nature become customary for males—and perhaps for some Dianas. Except when catastrophic environmental changes take place,—migration, war, famine, access of wealth,—health customs in dietary, shelter, prevention, and cure of disease, and the like, probably slowly improve through trial and error, and survival.

The general objectives of physical education can best be derived from inductive studies of the defects or shortages in the physical well-being of adults. Take any adult case-group, for example, "home-making women," ages thirty-five to sixty, family incomes over all ranging from twelve hundred dollars to twenty-four hundred dollars, rural dwelling, American ancestry, three to six children, and schooling from sixth grade to second year high school. What are their prevailing shortages as respects physical well-being, including needed forms of strength, endurance, and reasonable bodily grace or beauty? These can be analyzed, rated as to relative significance, and then ascribed or traced to sources. Some are due to unavoidable inherited qualities of mind or body; some are the unescapable concomitants of environment, including vocation; some could have been escaped if the individual had "known" more; some, also, if the individual had "willed" to use such knowledge as she had.

Various other analyses of these shortages in physical well-being are practicable. Which are due to contemporary inadequacies in medical science? Which to needlessly bad conditions in work? Which to defective education? Which to defective conditions attending schooling?

Such analysis is the only proper sociological starting point in determining the needs and possibilities of physical education in schools. Let this be defined as including *all* desirable and practicable procedures in schools designed *primarily* to conserve and advance not only health but all the other conditions of bodily excellence—physical strength and endurance, bodily grace or attractiveness, and the like.

Education in schools at any given time concerns itself primarily with the potentialities of the oncoming generation of adults. If adults of to-day show prevalent illnesses due to malaria, and if modern science has discovered the sources of, as well as easy means of preventing, malaria, then the schools should and will impart that knowledge. If adults of to-day show serious handicaps due to disregard of dentistry, then the next generation can somehow be taught the importance of that form of specialist service. If many adults now go through life with diminished efficiency or happiness because during the plastic time of youth certain muscles, bones, or organs were insufficiently exercised, nurtured, or trained, then schools have clearly indicated outfields of responsibility.

Objectives of school-controlled physical education can conveniently be assembled under these differentiated heads:

a. **Coöperative correction** by school and extra-school agencies of shortages of extra-school education of home, play-place, farm, etc., as respects normal nurture, shelter, physical play, avoidance of danger, prevention of infection, etc. Concrete points of attack can be determined only from analysis of local social situations. Functions of schools here are chiefly residual, and, under normal conditions, will be of only minor significance for all ordinary schools.

b. **First-hand control** of conditions affecting health under which school work is done—including lighting, posture, periods of concentration and relaxation, local or school recreation, mental attitudes controllable by teacher, ventilation and drafts, school infections, accidents, strains of long transport, etc.

c. **School instruction** in, and idealization of, a variety of objectives emanating from modern knowledge of hygiene: safety first, clean teeth, fresh air for sleeping, dry feet, dangers of flies, contaminated water, local dietary defects, convalescence from measles and other children's diseases, sex hygiene, regularity of eating and other functions, infection of wounds, high heels, first aid, and many others.

d. **Health inspection** of school children, accompanied by recommendation or prescription for removal of adverse conditions diagnosed—defective eyes, tonsils, undernutrition, infections, and many others.

e. **School training** in: school-room postures, external cleanliness, and possibly oral hygiene, lunching, new physical games, and some others.

f. **Initiation by school** for continued use outside of school of approved forms of physical or other recreation, training, growth-producing activities, and the like, including: games for young children; games for girls eleven to fifteen years of age; games for boys eleven to fifteen years of age; dances; intellectual and social recreations suited to persons who have heavily worked the larger muscles; and others.

g. **Development in youth** of sane appreciations and ideals of health, strength, endurance, and longevity as these should be expected in years of maturity, but anticipated and prepared for earlier. *Methods of this kind of education are still obscure, inchoate, and hardly consciously experimental* (except in the ancient trial-and-error method of education toward the soldiers' calling). In this connection much will eventually be done, probably, toward eugenics; conservation of physical attractiveness; public sanitation; physical preparation for vocations; use of leisure; maternity; moral aspects of sex; and the like.

h. Specific physical training in schools toward ascertained adult vocational needs—heretofore applicable only toward military callings, but theoretically possible toward farming, factory callings, seafaring, maternity, teaching.

i. Various forms of relatively specific "physical training" toward general bodily development, or "big muscle" development, or development of vital organs and nerves basic to "big muscle" activities.

j. Possibly control and direction of "physical work"—as contrasted with "physical play"—as a means of physical development—not merely as respects size of muscles, agilities, and present strength, but in regard to more obscure products of physical and nervous endurance, resistance to diseases, poise, and the like.

The primary function of the home, sociologically interpreted, has always been the nurture of children. Obviously, such nurture includes a very large proportion of the protections, habituations, and activities that permit or promote physical development, and the acquisition of basic experience in hygiene. The special opportunities of the school to do what the home can not do come with the evolution of scientific hygiene, much of which, as knowledge, home-makers have not learned, and some of which, as practice, they are indisposed to further, owing to the conservatism of custom. Other responsibilities accrue to the school when social conditions impair the historic competency of the home to provide space and incentives for physical play, developmental physical work, morning nourishment, supervision in dangerous places, and the like.

Assuming schools to possess agencies of general health oversight as well as some competent teaching service, their residual responsibilities for one type of phyical education can be met by establishing coöperative relationships with extra-school agencies, especially the home. Instruction in hygiene can give children appreciations, ideals, and insights that may, in some cases, react directly on home practices—dietetic, curative, recreative, and the rest. Beginnings have been made in direct communication from school to parents, bearing specifically on home provision of hygienic conditions—operations, glasses, regularity of rest, restriction of dissipations. Numberless specific objectives of work of this kind are now appreciated by progressive educators, but means to their realization are lacking in definiteness and economy.

School life involves many artificialities which affect health. The disciplinary punishments of older types of schools—corporal punishment, solitary confinement (of boarding schools), long standing in difficult positions, "keeping after school," and the like, often produced injuries.

Doubtless many boarding schools promoted infections and vice. Bullying has long been increased by the social conditions of boarding and some day schools. In all schools, and possibly most of all in Oriental countries, the study of books has been a severe tax upon eyes, and most all where architectural conditions and night study have imposed poor light. The subject is obscure as yet, but probably American blackboards also impose their peculiar strains upon eyes. Ventilation has long been a problem, but underlying scientific facts are still so obscure that we hardly know as yet what is bad ventilation. We can readily understand that from four to six hours daily of work in the sitting posture is a highly artificial thing for a growing child, and could leave permanent injury if not somehow counteracted. The gregariousness of school life facilitates diffusion of infections. Very probably certain conditions of school instruction—a fretful or terrifying teacher, ill understood tasks, annoyance from fellow pupils, noisy rooms—all conspire to produce "nervous" strains. The competitive sports permitted or conducted by higher schools sometimes result in physical injury, as do occasionally also laboratory and shop work.

Hence modern education evolves a very extensive series of objectives of physical education centering in the right control of conditions under which school life must be lived and school work done. Scientific standards are rapidly being developed in some of these fields—lighting of rooms, typography of books, oversight of those entering competitive games, purity of drinking water, control of infections. Progress has been made in studying problems of alternating recreation periods with periods of work and sitting. Some fairly good empirical standards have become generally accepted as to lessening worry or fear on the part of children, and in promoting social environments charged with hopefulness and cheerfulness. Heating and ventilation are still inadequately understood, as are suitable lengths of school day, week, and year in relation to physical well-being.

We know little yet about the physical strains of transport on children carried to consolidated schools. Perhaps we know still less of the consequences to the ultimate health of sensitive children of certain kinds of teaching temperament or practice. Still more obscure are the physical results that accrue to womanhood from the ambitious intellectual pursuits of algebra, foreign language, and basketball by highly socialized adolescent girls.

It is obvious now that what many of us still think we know about ventilation "is n't so." Some of the virtues of the "open-air" room are doubtless imaginary. Probably we shall have to recast nearly all our traditional notions about posture in school seats. The present writer

strongly suspects that one of the most physically harmful conditions deriving from schools of certain kinds is "boredom"; but it is obvious that supervision of a much more scientific order than we now have is essential before we can mitigate this.

Health inspection of schools by medically qualified experts becomes a means to the ends just referred to. The chief objectives of this are now fairly well defined, but we possess few standards as to its desirable scope. Health inspection should, theoretically, cover all phases of physical education. It should mediate between school and home, assure hygienic working conditions in school, supervise school instruction and training in hygiene, and promote provision of objectives and facilities for physical development and training. Practically it has only begun its work in most of these fields.

Developmental and recreational physical play must, under most conditions now prevailing, be carried on largely away from school oversight. Educators seem sometimes to forget that children from eight to ten years of age live very active physical lives at least four thousand hours a year, of which hardly a third are under the supervision of schools even under most favorable conditions.

But schools may exercise valuable functions, first in idealizing the extent and character of such physical activities, and second in literally "training" its pupils in new and more adequate games. Especially important is it that schools develop practical attitudes in laying foundations of interest, appreciation, and habits toward the recreational activities to be followed when school-provided facilities are no longer available.

Is it likely, for example, that many women, or men either, between thirty and fifty years of age can get suitable recreation through basketball, tennis, or rowing? Suppose they had become habituated to walking, hiking, and exploring instead? What are the facilities for physical recreation now accessible to our acquaintances in sedentary employments who have only moderate incomes?

Again, are we, as men and women, habituated to take physical recreation alone? May our dependence upon fellowship here not be due largely to the fact that in youth nearly all sports were not only gregarious, but educators insisted on extending the coöperative and competitive conditions?

The vocational, civic, and cultural demands of adult life tax all bodily functions severely, sometimes through excessive use, sometimes through disuse. Unquestionably, a large part of the physical education of the future will consist of purposive preparation for these contingencies.

Doubtless that is what is now intended in what is called physical training; but the tested objectives of that, beyond the standards of physical development now probably reached by the large majority of boys without any such training, are ill defined and very conjectural.

Only "case-group" studies will help us here at present; and, in the absence of fuller data, these must be largely hypothetical. A few examples will suggest methods of study.

In a certain suburban high school of fifteen hundred pupils are regularly to be found one hundred first-year girls of whom these facts are essentially true: they are keen and ambitious; under heavy "social" stimulation; and destined probably to go through college or normal school and to spend some years in teaching or other semi-professionally highly "nerve-straining" work. They seem now to lack big muscle development and various forms of physical endurance. More than 60 per cent. of these girls will marry between twenty-two and thirty years of age. They will find the physical strains of motherhood and home-making very severe.

Knowing the essential characteristics of these girls and their probable future, what programs of developmental and conservative physical education should be recommended for them? Ought we not to be able to do as well by them as the Greeks or Teutons did by youths anticipating military service? And is a régime of "competitive" basketball for these girls a valuable contribution or a man-imitating travesty on right physical development?

Let us assume, again, in an urban school, one hundred boys of whom it is safe to prophesy that they will enter clerical vocations. We desire to start at age fourteen building strong and resistant bodies against the strains, the rustings, the peculiar infections, of those vocations. How shall we proceed? Is football as valuable as scouting? Are "well developed" big muscles an asset or a liability? Highly developed metabolic processes? Obviously, many questions could readily be asked here to which scientific hygiene has at present no satisfactory answers, but it is important that physical educators should continue to ask them.

Is physical work in youth—of the "big muscles"—an essential means toward adequate physical development for the needs of adult life? We do not yet know certainly—but it is inherently probable. Physical play is indispensable, but it is a very different thing in process and result from physical work. Neither physiologists nor psychologists have given us, as yet, sufficient light on these essential differences. During human evolution, from far back in paleolithic times down to yesterday, it is virtually certain that small children played abundantly, adolescents played and

worked (under compulsion) intermittently, and that girls and women indulged less in sport and pursued more steadily routine work than did boys and men (since the latter must store their energies for the chase and the feud).

With such heredity, it is probable that optimum physical development can accrue now only from a regimen in which, from the age of ten to eighteen, at least, physical toil in reasonable quantities is interspersed with physical play. Farm rearing usually insures such a regimen now. But many urban boys, and in still larger measure urban girls, are apt to reach adult years without ever having really known physical work. Having in mind the endurance and resistances needed by them from thirty to seventy years of age, is it not probable that these start adult life under a severe handicap?

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