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SOME PROBLEMS OF SOCIETY AND ENVIRONMENT

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SOME PROBLEMS OF SOCIETY
AND ENVIRONMENT

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DELIVERED AT UNIVERSITY COLLEGE, LONDON,
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BY

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PREFACE

It is a pleasure to express here my grateful appreciation of the kindness of Dr. Pye and the authorities of University College, London, in making me an honorary member of their distinguished company, and to Professor C. B. Fawcett for his kindly welcome and help.

The three lectures which follow sketch lines of inquiry, and, whenever possible, attempt to turn attention to the same phenomena from different aspects in successive lectures. These efforts are intended to be suggestive rather than systematic, to encourage inquiry, first-hand observation and independent reflection.

H.J.F.

May 1st, 1947.

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SOME PROBLEMS OF SOCIETY AND ENVIRONMENT

I

POPULATION AND ENVIRONMENT

IN the XIXth century Charles Darwin made the world realise not only the principle of natural selection, which he described as one of the factors of evolution, but also a more general truth. He had a vision of evolutionary change running through time, and this concept brought to the fore the fact that living things and their environments must be studied together, cannot be understood apart from one another. We cannot, on the long view, distinguish in any final sense between influences of heredity and those of environment, though we can sometimes think we see immediate influences of environment, as when famine, or, on the other hand, better feeding, seems to lead to notable results. Even those results, however, may be partly the working out of inherited features, either more or less. There is little doubt that environmental influences affect growth in many ways, but it is quite probable that they often do so by hastening or retarding processes working themselves out on a hereditary basis, as Dr. G. M. Morant has pointed out.

Darwin's most vital conclusion, for mankind, was that man and environment, or shall we rather say men and their environments, need to be studied together if they are to be understood. This is the more important in the case of Man because his activities so greatly and durably alter his environment for better and for worse.¹

In setting forth his position, Darwin had the vision of man as a product of a long process of natural change, and he thus enormously enlarged our perspective of humanity. In the year of publication of the "Origin of Species," Boucher de Perthes was convincing the world that implements he found associated with mammoth remains were really the work of men, and he also thus did pioneer work for the extension of the human period from six thousand to six hundred thousand years. At about the same time Gregor Mendel in Brno, Czechoslovakia, was doing his epoch-making research on heredity, so the years round about 1860 were crucial for changes in human thought. Of the foolish opposition to Darwin and the vulgarities of a bishop named Wilberforce one need say little: ignorance and prejudice have brought deserved disgrace. What is more important is the realisation that the new modes of thought took many years to penetrate into scientific research. Almost down

¹ See SIR JOHN L. MYRES' lecture "Devastation," *Journ. Roy Anthr. Inst.*, Vol. 73, 1943.

to our own day there are still attempts to sub-divide mankind into classes called races, whereas the more profitable line of enquiry is into the relations of particular individuals to particular environments. Classification is only a convenience in the case of mankind, as will be argued in more detail in a later part of this lecture. Again, in a famous expedition 50 years ago, to study some lowly peoples, noted psychologists concerned themselves to find out differences in the range of working of sense organs between those lowly people and ourselves. The results do not seem to have been specially helpful, and have not, as yet, been followed up very much. We now realise how much further they might have gone had they studied the sensory workings of their subjects under the varying conditions of temperature, solar radiation, moisture, wind and so on. Work on these lines has been done by and for our Forces in the 1939-45 War; and the results may open up fields of thought and researches which the geographer must help to till.

Human geographers cannot be isolationists. We are studying human life and we must co-operate with physiologists, archæologists, psychologists, historians and others in an attempt to see life steadily and to see it as nearly "whole" as we may. It will be well if we and our colleagues in allied fields all realise what Lao Tse is reputed to have said long ago: "Forasmuch as our eyes are not strong enough to look into the naked fire of Truth, it hath come to pass that some look through green glass and some through red, but it is nevertheless one fire."

Before Darwin's influence began, thinkers such as Ibn Khaldun in the fourteenth and Montesquieu in the eighteenth century had seen that there were relations between Man and climate that were highly significant. Ibn Khaldun thought the great heat of the latitudinal belts near the equator limited human effort, and he noted the absence of cities from that zone, an interesting indication of a world-view taken by a man who was not blinded by the superstitions that at that time weighed down European minds so heavily.

To these early thinkers we must add men, like Humboldt, concerned with distribution of vegetational zones and their connection with human life, but even this work hardly attained the dynamic quality which Darwin imparted, and which we can attain and use if we are willing to confess a brotherly relation with geology, meteorology, biology and a wide range of humanist studies. This is not to say that our tasks are necessarily and always mixed up. Our historical colleagues are specialists on the reading, including reading between the lines, of ancient documents. By way of contrast may I add that I think our special task is enquiry in the field, to appreciate differences of opportunity and of the ways in which those opportunities are used or neglected. Field research and its expression, especially through maps, is our particular task.

But I would plead that, if we hope to be geographers seeking understanding, we should not content ourselves with the inevitably limited field of study defined for us in our undergraduate courses. We should try to know something of the sister studies, not merely by passive acceptance of the views of some author, who will usually be out of date, but by trying to see how conclusions have been reached, and whither the progress of knowledge is trending.

To contribute to the understanding of human life in its manifold diversities, and especially its regional diversities, therefore, seems to me to be the task of the human geographer working, not timidly behind a barrier, nor in a field hedged round with notices that trespassers will be prosecuted, but interweaving his efforts with those of colleagues in overlapping fields who have approached the problem with a different technique and a different perspective.

Men and environments need to be studied as concerned with both the individual human organism and with the human group. Let us consider some matters relating to the individual organism first.

The darkest skins in Africa are found among the Wolof of Senegal and other groups in a zone stretching thence eastwards to the south of Lake Chad and on to the Sudd of the White Nile. Not all the peoples of this Sudanese belt are so dark; one finds groups of descendants of later conquering immigrants with more elaborate equipment, probably protecting themselves more effectively from the strong actinic radiation of this dry belt. In Angola, in roughly the corresponding latitude of the southern hemisphere, we again have the dry climate and intense actinic radiation, and here again the skin may be very dark. The latitude of incidence of the vertical noon-day rays of the sun shifts a little more than 1° in three days at the equinox when these rays are near the equator. The shift is less than 1° in 15 days as we approach and begin to recede from the solstices. The belts towards the tropics of Cancer and Capricorn thus get specially intense radiation for two to three months, and this is particularly effective under the frequently cloudless skies of the regions named as having very dark-skinned peoples. Moreover, even when the sun is lower in the heavens, in the latitudes in question, the actinic rays still pour down through the blue sky.

Skin pigment or melanin is an excretory product which stops the actinic rays from penetrating deeply into the skin in too great quantity. Among persons with delicate, unpigmented skins that penetration may cause painful trouble and loss of efficiency. This by no means tells us how the skins of the Wolof have become pigmented; we must distinguish between origins and ultimate utilities, but it suggests that such pigment, once in existence, has considerable value. It seems possible that the excretory work of the kidneys is less active in hot climates and may be supplemented by the skin.

In the cloudy north-west of Europe, on the other hand, the sun's rays, even at noon at the summer solstice, are far from the vertical, so the rays are more dispersed, have a longer path through the atmosphere, and are absorbed in greater quantity before they reach the earth, especially when the atmosphere is moist and when they have to pass through cloud. The amount, not the proportion, absorbed by cloud or fog is much the same whatever the latitude, if there be cloud or fog; so, if the total radiation theoretically receivable is low, there may be little unabsorbed by the time the rays reach the earth's surface. It is well known that people with pigmented skins are liable to various troubles in cloudy areas in fairly high latitudes, especially during childhood. Actinic rays, in proper quantity, are known to help the formation of Vitamin D in the skin, and, if the relatively small supply in northern latitudes is stopped at the

surface of the skin by pigment, such troubles as rickets (rachitis) are apt to occur. Children with brown skins sometimes need treatment with artificial sunlight if they live under our cloudy skies; and not all their troubles can be ascribed to poverty.

It is at least a useful hypothesis that skin colour has been intensified in regions with important dry seasons near the tropics of Cancer and Capricorn, and has diminished in cool moist cloudy areas like our own. Let us, however, fully recognise that the organism is not inevitably committed to one particular response to an environmental influence; variety is a feature of life.

Lest it be thought that the yellow-brown colouring of several Arctic peoples in some way contradicts what has been said, let us realise that here there may be long insolation in summer as well as reflection from the snow surface. Moreover, many, if not all, Arctic peoples have spread from Inner Asia, where yellow-brown skin is very characteristic.

In Inner Asia, with much sunshine and blue sky in many parts, and thus at least a probability of brownish skins, there is a long period of intense cold; and a dense skin with well-sunk blood vessels has a special value. That density and the paucity of blood vessels near the surface help to give the yellow tinge.

In order to get another contrast, let us return to Africa, and think of the hot wet belt along the Guinea coast. The moist atmosphere and the frequency of cloud are responsible for a smaller reception of actinic rays, and the forest may also give shelter. But the temperature is nearly always high, uncomfortably high even for the peoples whose stock has been there, perhaps, for millennia. Cooling devices are valuable. The sweat glands are both numerous and large, so there may be strong evaporation (and thus some cooling) when environmental temperatures permit. Blood vessels are numerous just under the moist skin and bring a lot of fluid near the surface, fluid whence waste is extracted to be deposited as pigment in the skin, but fluid which contributes a red tint to mingle with the brown. So we get the chocolate skin of some West African peoples. We also note the short, broad nose with wide nostrils and the everted lips and large mouths, all aiding the cooling process.

The very dark skinned men of the dry lands sometimes have thinner lips and less largely open nostrils, but this is not invariably the case, as the people near the Nile Sudd show.

If we envisage these various specialisations of the skin as meeting needs in diverse environments, we shall realise that the specialisations we have noticed are a part of a very complex adjustment, and that reversal of such a complex of adjustments is almost unthinkable; in other words, specialisations are in most cases irreversible. As man is highly mobile over long distances, it will be appreciated that we often get diversities of skin colour side by side, even within one and the same group.

In early days people, living by collecting and hunting, were in relatively small groups that were much inbred, so a valuable variation, once it had occurred, might be passed on and intensified by the mating of individuals possessing it, to be established by natural selection.

With modern larger groups and more out-breeding the establishment of specialisations may be less marked, but some facts are known. The coloured men of at least the northern part of U.S.A. have fewer and smaller sweat glands than have their kin in the West African forests, and the people of West African origin in the West Indies differ in some details from West Africans. How far an infusion of "white" inheritance has been operative here it is difficult to decide. What has been said above about skin is enough to show that the problems of climate and Man offer an important opportunity for research. The incidence of the solar rays round about the violet end of the spectrum is obviously a question of special importance; and it is not only the matter of the annual total that needs study; we need also to know whether there are prolonged periods in which a large quantity is received, for example a long dry sunny season as in many parts of India, even if such a season alternates with a long wet one. That the strongly pigmented skins which absorb heat-rays occur in hot climates suggests that stopping of excessive ultra-violet may be of more importance than penetration of some extra heat.

Viability depends not only on the reactions of the individual to the influence of his environment on his own life; the question of reproductive power or replacement comes in. Here is another field of enquiry needing more attention. At present, it seems that people of British ancestry do not reproduce themselves well in certain environments, but how far physiology and how far social factors affect the result it is difficult to say. At any rate, in certain cases, the people of British descent tend to diminish, whereas southern Europeans seem to maintain their stock more effectively. It has been claimed that prolonged stay in climates of extremes has ill-effects on people of ancestry that belonged to regions of mild conditions. The bright sunshine and heat of some warm lands are said to furnish a strong stimulus, which, in adolescents especially, may affect the sex organs particularly; but, after a time, the stimulus wears off and leaves a feeling of lassitude and a craving for artificial stimuli. This stimulus obviously does not act in the same way on all people, and special differences are claimed to occur between many blonds on the one hand and brunets on the other.

In all this field of enquiry it is important to have in mind the fact that nature is not committed to a single response to a particular stimulus. We note that Chinese thrive under moist equatorial conditions in Malaya, with a skin very different from that, for instance, of the West African. The infinite variety of nature is a cardinal fact.

When the biologist studies head form, he finds a distribution pattern vastly different from that of skin colour. Some peoples in South Africa have heads much like those of some people in isolated, inbred corners of north-west Europe. The resemblances may well be a result of very early migration in both directions from a common centre, but one lot has become dark, the other white skinned; not quite so white, however, as the general population of Britain, for example.

If we classify men by head form we must link groups who, in skin colour, hair form and so on are very different, and *vice versa*. Any attempt to subdivide mankind into supposedly distinct races is a mistake. A few isolated,

inbred groups, such as Australian aborigines or Greenland Eskimo have more uniformity within the group, and thus more right to be called "Races."

In the Isle of Man dark hair and moderate or short stature, with features such as are also common in South Wales and South Ireland, are most characteristic in the east of the island. Here also one finds ancient monuments telling of prehistoric intercourse with south-west Europe, and along the east coast of the island, between Douglas and Ramsey, are numerous coves for alternative landings of boats; the ancient monuments are at focal viewpoints above the coves. The same general style of monument is found in numbers in Antrim and on the south-western Pennines. The eastern projection of the Isle of Man was an intermediate station.

On the other hand the far north of the island has a larger proportion of tall fair men, and we find there relatively few traces of the prehistoric times of the ancient monuments of the south, but abundant evidence in burials and place-names of the Norsemen, whose invasion of Man is noted in records. The north lacked the great stones which the prehistoric sea-rangers wanted for their monuments, its coves were far less convenient for their little boats, its viewpoints not nearly so fine. It was isolated from the rest of the island by marshes behind Ramsey, and, having little population, was open to the Norsemen for settlement.

One might go on to speak of the south-east and south of the island with a story differing again from that of the eastward projection, but enough has been said to show the help we get towards understanding if we link geographical, archaeological and biological studies.*

Let us now look into questions of density, rather than of type, of population, a specially important topic in human geography. Density is obviously linked with climate, vegetation and relief, especially through modes of life. But we need research and experiment on modes of expression of densities; averages are as misleading as usual, and efforts to make population-contour maps have revealed the limitations of the idea.

Our earliest human ancestors apparently lived mainly by gathering, but began early to devise pitfalls for animals on the open grass plains to which Man migrated as he became a groundling and started to learn to walk more upright, eyes front. Thence, as we know from early development of his weapons, he evolved into a master-hunter of big game, working in small co-operative groups of 20 or 30 people over a wide range of country. In terms of density we should have to speak of one person per x square miles, and it is probable that, when Britain's people lived by hunting, the population of England and Wales was not more than a few hundreds, and was very inbred in consequence. As North Africa became more desertic, hunters found their quest more difficult and relied more on their women's collecting efforts, digging up plant roots with a pointed stick, gathering grass and other edible seeds, and so on. Where, as near the eastern Mediterranean, the grasses included the ancestors of barley, spelt wheat and perhaps some millets, there was a considerable opportunity.

* See DAVIES, ELWYN and FLEURE, H. J., "Anthropometric Survey of the Isle of Man," *Journ. Roy. Anthr. Inst.*, Vol. 66, 1936.

Elsewhere, for ages, fleshy roots and the like became the supplement to meat or sea-food; and fleshy roots were apparently cared for. We still have, or had till this century, a few remote peoples with rudiments of root and tuber cultivation, notably in Papua and Melanesia, but that phase has passed away more completely than has the hunting-collecting phase which lingers among remnants of dark Australians, African Bushmen and Forest Pygmies. The phase with root and tuber cultivation implies a climate with several months having temperatures over 43°F., and thus more food for animals as well as for men. Density of population, still low, may have been much higher than in the hunting-collecting phase. It is not quite right to place American Indians and Eskimo in this category without reserve. The American Indians' Asiatic ancestors very probably knew something of cultivation and other arts, some of which were lost as the people drifted around from north-east Asia to Alaska through the bitter cold. We need recall only the rusting of the wheat carried by the Pilgrim Fathers to New England to realise some of the problems of transfer of agricultural experience over long distances through severe diversities of climate. The migrants from Asia were drifting along, the Pilgrim Fathers moving with an equipment designed, however imperfectly, to meet the circumstances of a selected objective.

The hunting-collecting phase and the initial phase of root-cultivation are both, so far as present populations are concerned, mere lingering remnants, and it happens that the first has survived here and there in the great spaces too dry for any cultivation, while the second barely survives in isolated spots not reached until recently by the greater development of technical methods. But there is another point here; the hunter-collector remnants of the present day are so far from average modern man in ideas and outlook that they are on their way to extinction, save that a few may be taught by very deliberate and skilled methods. The lowliest cultivators have learned to take thought for the morrow and to work, be it ever so little, for a result to be achieved weeks or months ahead. Probably as a result of the war of '39-'45 almost all of them have been pulled into the maelstrom of modern life; it is no longer useful to try to study native life untouched by modern jostling.

Members of the grass family that we call the old world cereals have given men a chance of a large step forward in equipment and organisation, and their effective spread has been almost all over the main land mass of the Old World apart from unirrigated deserts, hot and cold, and parts of the hot, wet forests. They reached the Pacific, including Australia and New Zealand, and also the Americas, with the advent of Europeans; but here again America forms an exception because maize had been domesticated long before, and so had the potato.

The grasses have shallow roots and are thus prosperous in several soils that have the plant food drawn up to the surface by the upward movement of water on the way to evaporation. In areas with a long dry season and the special advantage of a quick beginning of growth when opportunity comes, the seed profits from a firm consistency and a good food content. Man found such grasses in South-west Asia and North-east Africa—notably emmer wheat,

barley and some of the millets. Euphrates and Nile presented special opportunities for their cultivation once Man ventured from the dry edge on to the alluvial plain with some control of flood water.

So we have a phase or stage of rudimentary grain-cultivation spreading mainly from the Euphrates-Nile area. Its earliest home and the details of its first extensions are matters more for archæologists than for geographers, at any rate at this stage of the growth of knowledge. But the broad facts concern the geographer deeply.

Wheat and barley have found it more difficult to adapt themselves to regions warmer than their early homes, but they have, in the end, adapted themselves to colder climes. They ripened before the hottest months in their early homes. The wheats especially, moreover, are exhausting crops needing careful cultivation for good results. In the Euphrates-Nile regions of settlement the baking of the mud surface of the flood plain in summer is a problem attacked by repeated criss-cross scratching with a light plough drawn by one or two beasts. The contrast over against cool temperate lands is dramatic. There evaporation is less, plant food in solution is less drawn up to the surface, ploughs must be large and heavy if they are to turn up the lower layers of the soil, and criss-cross ploughing is ineffective. The schemes of land property and land tenure, as well as the whole agricultural régime have thence differed strikingly. The large plough has traditionally needed perhaps four oxen to pull it; eight, sometimes mentioned, are probably the result of misinterpretation of old documents. The large plough could not become effective until it was shod with iron, and this contributed to the lateness of entry of N.W. Europe into the main stream of civilisation.

It is probable that, in spreading to cool, temperate lands, Man found the advantage of maintaining the flesh food of his hunting ancestors, and so got a supply of proteids which the poorer people of the warm lands found it difficult to secure, especially as meat food was often not suitable to their circumstances. One might, indeed, say that many peoples of warm lands have been undernourished for centuries, and that not only through poverty, but through inherent difficulties. The study of diets and their improvement is one of the duties of the biological geographer. The danger of infected meat in hot countries is obvious.

In inter-tropical Africa south of the Sahara and Abyssinia we have a basically millet-agriculture without animals doing farm work. Human carriers have often been women because the men must be ready to fight wild beasts and enemies. Infant mortality is so high that women need to bear numerous children to maintain population. There are only a few established institutions with means of carrying on over a number of generations, so the accumulation of experience is fragmentary. As Man seems basically adapted to temperatures between 16° and 23°C or between about 60° and 73° or 75°F, the long periods of moist heat in W. Africa, and of dry heat in other parts, hamper thought and promote dependence on custom, with the accompanying tyranny of witchcraft.

For the present survey the fact stands out that, with African hoe agriculture, population density may rise to 20 per square mile, sometimes rather more, even without the use of animal manure. But the essential is that the unmanured patch of land is quickly exhausted, and has to be left to go back to the wild to recover, if it can escape savannah fires and other dangers, which may lay patches bare to the sun and so get them iron-crustured through over-evaporation. The care of the soil, as the late Geoffrey Milne, in particular, was studying it in E. Africa, is an essential research topic in human geography, most of all in inter-tropical Africa.

Plough agriculture belongs to the Nile-Euphrates area and its extensions, north of the Sahara to Atlantic and Pacific, together with the quite modern spread through European activity into America, Australia, New Zealand, some Pacific Islands and Africa.

Both eastwards and westwards it spread in two different forms suiting itself to different latitudes. On the west there was the extension to the Ægean, and later along the Mediterranean; and there was also the very different extension to Europe north of the Alps and the Black Sea, and away to Scandinavia. On the east there was the extension to India and beyond; and there was also the very different extension into China and, ultimately, Japan. This broad general statement is not intended to deny the possibility of influences reaching China *via* India.

The eastward extensions somewhere, probably in India, met rice, and thence gained a food crop in vast quantities cultivable on fields that could be flooded, while the tolerant millets gave an alternative on lands of less assured watering or otherwise less suitable climate. The small plough was suitable in both India and China. In both, the village developed here and there into the city and gave a durable framework of more or less civilised life in the third millennium B.C. The date is a matter for archæologists; the fact that matters here is that the framework, with adjustments, it is true, has lasted on to modern times. China has given birth to many valuable items of Man's equipment—citrus fruits, tea, paper, printing, porcelain, to name only a few; but none has directly multiplied Man's power over inert matter; thought has gone in other directions. The old pattern, already highly complex millennia ago, defied revolutionary change until within the last hundred years. India, too, has contributed to philosophical thought through her aristocracy, but the traditionalist masses have gone on their own old ways until Europeans have intervened.

We thus have deeply traditionalist societies living by routine, in climates which, for a good part of the year at any rate, do not prompt initiative, endless numbers performing duties on a very small scale, kept, perhaps, as busy as the climate allows; and the women kept busy producing children, while the death-rates were enormous from war, famine and plagues. As these causes of mortality were less powerful in India for 20 years before the war and famine of 1940-1945, but the old social pattern maintained itself, we have the gigantic increase of population, an increase in the case of India averaging nearly five millions a year for the twenty years 1921-41. Let us note that the traditionalist life necessitates a minimum of large-scale organisation, and the peoples of these

lands have been very helpless in face of more highly organised outsiders, even when weapons only indirectly came into consideration. The Chinese in the nineteenth century were described as the least governed civilised people in the world.

India, lying south of the glaciated areas of the Ice Ages, has received human drifts from very early times, and lowly folk have found a refuge and place of survival in its forests. China, on the other hand, appears to have less of the very lowly elements of humanity, and we may note that there are traces of glaciation almost as far south as the Yangtse. The contrasts between India and China are as manifold as their resemblances. In both cases subsistence farming of small family lots, persistence of a high birth-rate and at least temporary reductions of death-rates have raised the density of lowland population in various places to figures full of problems for the future. The total population of India is over 400 millions, that of China is estimated at an even higher figure. India has more than two-thirds of its population dependent on agricultural work, and the number of these on each arable square mile has been estimated at 423. In some Indian areas, indeed, the average density of population is over 1,000, and over large regions the density is over 500. The rate of increase was not excessive until the period 1921-41, but the large totals nevertheless created a problem in organisation relating to a traditionalist people living largely a self-contained life in villages, with both conscious and unconscious resistances to the changes of economic and social pattern made inevitable by contacts with modern commerce and communications. In India part of the phenomenal increase in 1921-41 of practically 100 millions was due to a dramatic decline of the death-rate. There was, on the other hand, a slight decrease of the birth-rate, but this decline always and everywhere lags behind the decrease in death-rate that modern conditions, equipment and knowledge have brought about. The cases of India, China, Java and Japan illustrate most strikingly the fact of large population increase attendant upon the transformation of traditionalist into modern life. If India goes on adding to her population more or less as Europe did 1840-1940, the total reached by 2040 might be nearly 800 millions, or nearly 500 per square mile (urban and rural). China might show corresponding figures, Japan has shown analogous ones, as has Java. The total result is most formidable; yet modernisation is inevitable and will ultimately bring a decline of the birth-rate. Some humanitarians are anxious to speed up modernisation, regardless of reverence for custom, in order to reach the phase of reduced birth-rate and rising standards of living. Others are more for conservation of tradition and perhaps do not see the population problem so vividly.

In and around the early home of plough agriculture we find very high birth-rates and death-rates in Arabia, and, on the African fringes of Islam, a higher birth-rate (or at any rate, survival rate of children) among Muslim than among non-Muslim peoples. Towards European Turkey and the Ægean both birth-rates and death-rates are much lower, and thus nearer European averages. The urban birth-rates are, as nearly everywhere, lower than the rural. How far these countries will experience a decline of birth-rates it is difficult to fore-

cast; such a change is likely to come sooner in Turkey than in Iran, Iraq, Arabia or Egypt. The last-named country, with its expansion of irrigation in the last 100 years and the consequent provision of water at all seasons has revolutionised its life, and has 16 million people on little more than 13,000 square miles. The population was probably about $4\frac{1}{2}$ millions when Mehemet Ali had the great dam below Cairo built; numbers thereupon grew as the settlement of the delta became possible, but the rate of growth went up when the Assuan dam and other schemes were developing in the early 20th century. Some provinces have now more than 1,000 people per square mile, and this in a country basically agricultural.

These examples are sufficient to show that, where plough agriculture and village life are dominant features, contacts with the modern world of commerce have brought increase of density of population along with a continuance of low individual capacity for exchange; and consequently a low standard of equipment and widespread illiteracy goes on as of old.

In east-central Europe the same inferences have partial validity in spite of a greater degree of literacy and somewhat greater urban proportions and exchange activity. Here, as in the countries already discussed, more people are trying to live on the farms than the land can fully feed. It has been estimated that, in east-central Europe, 45 per cent. of the rural population must be considered surplus under present conditions, though the proportion would be less were mechanism increased, as it could be more easily than is thinkable in the rice lands of Asia and the irrigated patches along the Nile. The loess lands of the country north-east of the Carpathians, a region of very old settlement, would still be very seriously over-populated were mechanism increased on the farms. Naturally, the actual densities of population here do not approach the figures for the crowded rural areas of Egypt, India and China; here 250-350 per arable square mile is a maximum for rural life. Here, too, the birth-rate began to fall some years ago.

In western and north-western Europe the birth-rate has fallen alongside of the vast growth of towns, and the facts are familiar to all. In southern Europe persistence of old methods and of low individual productivity limit exchange possibilities and give a surplus of rural population, but not quite such a great one, save in Albania and a few other places, as in east-central Europe. In both east-central and southern Europe the slow development of alternative and supplementary occupations has involved maintenance and even sub-division of small holdings. The great majority of the holdings in east-central and southern Europe are under 5 hectares (12.35 acres) each, and in Greece and Spain these make up nearly 80 per cent. of the total number. In Roumania, Yugoslavia and Bulgaria these small holdings actually take up more than a quarter of the arable land. There has been a movement to sub-divide large holdings, a movement which for reasonable welfare and rising standards of living would need to be accompanied by better systems of co-operation in production and exchange, and by development of supplementary occupations

promoting exchange within the field of each currency. But here, as usual, there is the danger that production may thereby be made very expensive and really uneconomic.

The case of the Soviet Union is of outstanding interest as an attempt to deal with the problems of population growth and population density, but any discussion of it here could only adapt the statements of the recent "Population of the Soviet Union" by Frank Lorimer, published in 1946 by the League of Nations, Geneva (1946 II A 3), and printed by the Princeton University Press, U.S.A.

The spread of European populations to the Americas, Australia and New Zealand has been under the influence of mechanisation wherever the English language is used, and in most cases a phase of fairly high birth-rates has passed; and industrial urbanism and relatively low birth and death-rates have become dominant features. Save in French Canada and Latin America there is a strong feeling against subsistence farming on the lines traditional for east-central and southern Europe, and in the new lands checks increase of rural population. Life in many of the new lands is thus deeply conditioned by experience in Europe. The British people's tradition of enterprise and mechanism, the traditionalist farming of 17th century France, the estate owner and peasant relationship of historic Spain, the revulsion against peasant farming among people who have escaped from east-central and southern Europe to U.S.A., are all factors of the situation. It is a situation in which the rural folk want to acquire and hold means of exchange wherever they can get free of traditionalist restrictions.

We have here very briefly followed some factors of population growth in regional settings and have glimpsed its overgrowth in some areas and possibilities of decline elsewhere. The world is probably not over-populated, but a large proportion of its people cannot obtain enough, sometimes cannot produce enough, to exchange and so to get their growing needs satisfied. Some keep those needs at a minimum and increase the population; other expand those needs without limit and tend towards a stable or reducing population. Where the best balance lies is a matter for much regional study, and not for general conclusions.

II

SOCIAL ORGANISATION AND ENVIRONMENT

As all modern men live in groups larger than that of man, wife and children, and as all evidence of former times points in the same direction, we can be fairly confident that a group-habitat is a general scheme, an expression of the fact that *Homo socialis* would be a useful designation for our species. The size and organisation of the group-habitat depends upon the potentialities of the group and of its environment. When it is, or has been, a fairly small settlement in which the main occupation has been food production, we have no hesitation in calling the settlement a village; where it is large, with many expressions of corporate life in architecture and with diverse groups of craftsmen, we readily speak of a city or town. But between the two are many variants difficult to put into either group. Broadly, we know that the town or city represents an increment; it is evidence of differentiation of activities and of exchange on a larger scale than was the case in the, often, almost self-contained village.

May we now look at some questions and features of village and town in various regions with this idea of possibilities of increment in mind, always remembering that any such possibilities tend to bring struggle for ownership, which in its turn gives scope to the power-quest so deeply rooted in human nature. Increment may therefore be, and often is, seized by some section of the community or some conquering immigrants, and the mass of the people may get very little.

Considering some special aspects of settlement-characteristics in Africa south of the Sahara and Abyssinia, we note first of all that this region has hitherto been subject to considerable disadvantages. It has apparently received its early population mainly from farther north (probably including the Western Sahara before that area became desert), and early immigrants had, in the course of time, to face temperatures above the optimum, as we have already seen (p. 8). But it is particularly the difficulties attending the spread of items of equipment that must be emphasised. Millets acclimatised themselves, but wheat and barley did not, and cereal food remained on a low level, to be somewhat improved after introduction of American maize and manioc. Bananas, an ancient introduction, have been to some extent a compensation; but neither bananas nor millets brought the social organisation that nearly always accompanies wheat.

The pastures all have tough grasses, poor in Vitamin C; and animals are specially liable to attack by tse-tse, tick and other parasites within as well as without. Cattle, sheep and pigs are all of poor quality under native conditions in inter-tropical and South Africa. Copper and tin both occur in Africa, but very far from one another, and the region under consideration seems to have missed a Bronze Age almost completely. This is of some importance, as bronze

taught men elsewhere a good deal about trade and craft; especially through the need for bringing together from diverse sources the two main constituents (copper and tin.). The African region mostly went from wood and stone to iron, crudely worked. We should here remember that the early and cruder stages of iron-working elsewhere acted as disintegrants socially; though, where trade had previously existed and it revived, incorporating utilisation of iron, there were great advances, as in the Mediterranean of classical times. The poor quality of the farm animals in the region was a factor hindering the introduction of the plough, which hardly penetrated here before the intrusion of Europeans. The hoe and the digging-stick maintained their dominance, and with these has gone the continued allocation of much routine of cultivation to women, who have, traditionally, and very naturally, looked upon such tasks as accessory and subordinate to motherhood. African cultivation has very widely meant using a patch until it was exhausted and then taking another and letting the first go back to the wild. Manuring, if practised, is of rudimentary character, and care of the soil is unknown in most parts; the land belongs to the group, not to the household, so the incentive for family-increment through care of the soil is by so much the weaker. Succession from generation to generation is not highly organised, and institutions are correspondingly limited—no written records and only rudiments of what might be called a priesthood. With all this naturally goes a paucity of specialised buildings expressive of the group life of units larger than a village, save that a special chieftain or king may have a special settlement for himself, his numerous wives and his servants. This settlement may be built for him, and is then a primary stage of a feature found in former times elsewhere, namely the idea of “new king, new capital.” The general unit of settlement is the village, and, with the exception of a few towns in Nigeria and spreading slightly southward, and of the Arab commercial settlements once existing on the east coast, there were no cities or towns in Africa south of the Sahara and Abyssinia until modern Europeans brought the idea with them. Africa south of the Sahara has been a region of limitation, within which are regions of debilitation, areas in which herding has to be given up because of flies and ticks, and in which Man finds it very difficult to maintain directive co-operative effort beyond a quite short-term plan. The almost self-contained village, the shifting use of land, the absence of records, the paucity of trackways, the slight development of trade, all were features of African life before Europeans affected it. They are all changing rapidly, but unevenly, and African peoples are accordingly being asked to step forward in a generation or two through stages which have occupied millennia elsewhere. For so rapid change they need tutelage, which, unfortunately, does not always appreciate that what is most important is adjustment of the mental make-up, a process which, thus far, Man has not been able to speed up very effectively.

A most dramatic contrast over against Africa south of the Sahara is provided by the Nile-Syria-Euphrates region, the “Fertile Crescent” of Breasted. Here was a region in which, as desert conditions spread in a late phase of the Pleistocene, people gathered near the rivers, the flood plains of which were no doubt obstructed with wet thicket. Here hunting came to be

supplemented by the women's work in collecting seeds of grasses which were valuable food; tending the plants likely to give food was a natural development, and Eve became the pioneer of cultivation and civilisation. The spring floods of Euphrates and Tigris, the summer (monsoonal rain) floods coming down the Nile from Abyssinia brought silt to the flood plain to renew its fertility year by year; and men learned to dig ditches and to use that flood plain to cultivate wheat (emmer), barley and other plants. In Mesopotamia and Syria, especially, it was possible to have domestic animals on the pastures, such as they were, near some rivers and on the hills (one recalls the psalmist's reference to the dews of Hermon); and the plough was developed as a consequence. The "Fertile Crescent" thus gave a flood-plain which could be cultivated year after year if the flood was controlled. This gave rise to durable village settlements with dwellings that, in the dry sunny climate, could be made of sun-dried brick and were typically made on the river bank for the sake of water supply, control of the ditches leading off from the river, possibilities of fishing and boat communication, and other allied reasons. It was an advantage that the sun-dried brick crumbled after a while and was replaced, as in this way the village came to be on a mound safer from the floods. But the village as such was durable, save that along the Euphrates changes in the braiding river introduced a factor of change in settlements.

The durability of the social equipment found expression toward the end of the fourth millennium B.C. in stone buildings connected with religion, and there is no need to give an elaborate account of the rise of cities—the oldest cities in the world—an increment of remarkable magnitude. The adjacent sites of Memphis and Cairo illustrate the inevitable and immense importance of the northern exit from the Nile Slot; the rise and fall of Ur, Nippur, Kish, Babylon and others bring out the vagaries of the Euphrates, changing the relative importance of its braided channels, silting up here and carving out there. Changing seats of power and of sanctity in Mesopotamia contrast with a greater constancy in Egypt, so long as it was self-contained. But when the isthmus of Suez became important at any time, as an entry for warriors or an exit for armies, or, as in modern times, a commercial route, Egypt was gripped by change.

It was often characteristic of ancient Egypt, as it has been of modern Egypt, that her external commerce was in the hands of non-Egyptians. On the other hand, the changeability of conditions of cities in many parts of the Asiatic portion of the "Fertile Crescent" has carried with it recurrent struggles for power, dynasties founded by conquest (often by herders of the arid border) following which came organisation, luxury, decadence and a new conquest, as Ibn Khaldun so insistently argued six centuries ago. The increment here has been seized by one group after another, and a general mobility had the characteristic effect of spreading features of Mesopotamian thought and equipment in antiquity in all directions. More and more as investigation develops it is seen how important Mesopotamia has been as a centre of radiation to India and China, to the Mediterranean and via the Pontic Steppe to the loess lands of Europe. It is interesting that this radiation took effect in the third millennium

B.C., and again and again afterwards until the tragic set-back of the Turkish conquest. These latter conquerors understood too little about management of an irrigation system; and an old region of increment, reduced to poverty for centuries, needs long and laborious effort to restore itself, now with capital equipment from more technically advanced lands, as the old standards of sufficiency and increment have been so revolutionarily changed by power machinery. It is interesting to note the comparative poverty of the remains of many monuments of early periods of increment in Mesopotamia. Hard stone was more difficult to get than in Egypt, and, even in Persepolis, a great deal of sun-dried brick was used and has long since crumbled, leaving stone lintels, door-posts, steps and window-frames and so on, standing.

If we consider India in analogous fashion we see that, while there have been cities as elements of Indian life from the third millennium B.C. onwards, the village here is the typical social unit and hardly more than 10 per cent. of India's huge population live in what may be called towns or cities. The cities have been in most cases expressions of the power and economic increment at the disposal of rulers. It is characteristic, for example, that quite a number of royal or imperial cities were built by one Mogul emperor after another in the neighbourhood of Delhi, and a cynic has hailed New Delhi as a characteristic British addition to the future series of ruins. The deep divisions among the people of India from time immemorial are illustrated in the cliff-top sites and approaches to some of the cities—the nucleus of Gwalior, Golconda and so on, but more important still are the facts of division illustrated in many villages. In the south, especially, the village of the caste-folk and the appendix where the pariah live can be distinguished, and sometimes the places within the village occupied by occupational caste groups are observably distinct.

The modern rise of Calcutta, Bombay and Madras has been described at times as turning India inside out. Once largely self-contained, with external trade as a quite minor factor in its life, India has been drawn into external relations that have made Calcutta and Bombay its two largest cities, while Madras is of the same order of magnitude as the largest of the internal cities, Delhi and Hyderabad. It is the misfortune of India that the poor quarters of Bombay, especially, are a disgrace to all concerned, though parts of Bombay repeat features such as the craft groupings in various streets which suggest a better social order, but one which has been undermined by mass production and the jostling of peoples in a modern port, in a region in which the birth-rate is still phenomenally high.

Looking at China, similarly, we see, here again, the vast number of villages, though there are more large native cities; but here again we have evidence of the "turning inside out." Shanghai, Canton, Tientsin, are all large, Shanghai the largest city on the mainland of Asia. Nevertheless, in China, these cities of external commerce are less "foreign-bodies" than are the corresponding ones in India, and Hankow-Wuchang-Hanyang, Peiping, Nanking, Chungking, and so on, stand out strongly. The urban tradition is stronger in China than in India. China has less deeply contrasted fractions in its population, India was a *terminus ad quem* for many drifts of early groups and

her jungles have allowed them to maintain their way of life. North China's loess has impressed a measure of uniformity of mode of life based on irrigated cultivation, generally more skilled than that of the great majority of Indian villagers.

India and China both have had large increments which, in agricultural village-dwelling communities, have generally tended to become concentrated in relatively few hands, usually of rulers and religious organisations. The village dwellers have traditionally responded to increments by the birth-rate. We should appreciate that the increment in these lands had also led to contributions to civilisation. While much remains undetermined, it seems evident that the teaching of which Gautama Buddha gave the greatest expression has deeply affected subsequent religious thought beyond as well as within the Monsoon Lands. How far the teachings associated with Lao Tse and Confucius may have had effects outside China and Japan cannot be said. In the sphere of material culture, however, the contributions of China are notable, and include tea, the citrus fruits, porcelain, paper, perhaps printing. It is claimed also that the idea of paper money came from China. It is well to maintain some reserves about origins of things and devices that may well have been invented independently more than once. The magnificence of Chinese art in painting and modelling is too well-known to need comment; it takes its place beside the greatest art of other lands.

It is an important fact concerning China and India that both Peiping and Delhi have imperial enclosures constructed under rulers who had come in with the aristocratic horseman tradition. The analogy in plan with the Kremlin at Moscow and elsewhere in European U.S.S.R. is very clear, though the Kremlin in European U.S.S.R. is a monument built not by conquering horsemen of the steppe, but rather by rulers attempting to assert themselves against these horsemen.

The short references to Africa, the "Fertile Crescent," India and China in preceding paragraphs are merely introductory to a consideration of some facts concerning Europe, but, before going into this, it may be well to notice a few relevant points concerning the lands of nomadism. The major arid belt of the Northern Hemisphere stretches, with small interruptions due to rivers, from the Atlantic coast of the Sahara to Manchuria. The majority of its inhabitants are settled folk living near rivers or in oases, and cultivating, often intensively and with irrigation schemes. But around the settled folk are often pastoral groups who may be dependent to a considerable extent on exchanges with the cultivators. They should be looked upon as a specialised offshoot from the cultivators. The purely nomadic peoples, also often dependent upon exchange with cultivators, represent in all probability a further specialisation. This is an important point in various ways, as it corrects an old error which constructed a general hypothetical sequence: hunter-collectors, nomad herdsmen, settled cultivators. It is not impossible that there may be a case of hunter-collector groups becoming nomad herdsmen, but all indications point to the sequence hunter-collector, hoe and digging-stick cultivator, mixed farmer with the plough.

Turning now to Europe, we note the very contrasted responses of

Mediterranean lands on the one hand and Europe farther north on the other. The Mediterranean had cities in the third millennium B.C.; whereas, in some parts of Europe which have had great cities in recent times, there were none before A.D. 1000, or even a later date. A contrast of 4,000 years in this respect is dramatic, and we should realise some of the factors involved.

The climates of most of the Mediterranean coast lands give fairly reliable rain, and reliable sunshine almost to excess. "The rains are over and gone and the time of the singing of birds is come" is a famous phrase from the "Song of Songs."

The wheat of the Fertile Crescent could spread fairly directly to Mediterranean lands, and, on the way, the vine and the olive and the figtree became important items of equipment.

Animal farming had its difficulties, for both the "Fertile Crescent" and the Mediterranean coast lands are summer-brown. "The grass withereth and the flower fadeth" when the Etesian winds blow in summer and the sun's rays beat down. For the Mediterranean lands, it was possible in many places to take the animals up to the heights for their summer pasture. The "rains are over and gone" by Easter (whence that festival), but the moisture they have left brings out flowers on the heaths and the humming and the honey of the bees has long been a Mediterranean feature. The islands of the Ægean offered bays for boat refuges, limestone and other bluffs for defensive sites near the ports, often with a spring gushing out from a joint in the rock. The joint may be hidden by solution of the lime and its deposition as it spread on the rock surface while the water evaporated, but Moses in the famous story knew where to strike this deposited crust so as to get joint-water. The island habitat offered a measure of security and opportunities for fishing as well as for commercial odysseys. The city set on a hill, sometimes above an anchorage, is a Mediterranean feature. In some parts even a place of village size may be as closely compacted as a town, with narrow streets between tall houses, and the street sometimes arched to help to support the houses as well as to increase shade.

One must add the oft-repeated fact that the calcareous rocks of the region are often of the nature of free-stone, that is, stone which can be cut accurately in any direction. It is not difficult to picture the influence of this upon architecture among people who had a tradition of wooden pillars and had migrated to a less wooded region, but had found this new resource. More subtle is the bearing of all this on geometrical thought and the art of mensuration, especially as the clear skies and strong sun give sharp shadow effects. As the free-stone is often iron-stained, the effect of a pillared front on a hill-top facing the setting sun is impressive.

It is most natural that Mediterranean idealism emphasised the city—"The New Jerusalem" of the Apocalypse, the "City of God" of Marcus Aurelius.

In addition to all this there is an almost more fundamental fact—namely, that the small, surface-scratching plough of the "Fertile Crescent" is also suitable on the yellowish and reddish Mediterranean soils, the colour of which shows that evaporation draws up moisture through the soil, and iron salts are deposited

at the surface. The plough should not go deep as the plant food-salts are near the surface, but it must be used repeatedly and in criss-cross fashion to keep the surface from caking hard with lime and iron. The surface soil is usable in many places only in alternate years, and there are spots in Spain so dry that the field can be cultivated only one year in three. Alternation of crops is, often, no help.

The city grew as an expression of increment and a centre of power, attaining great developments in periods which for one reason or another favoured commerce. Knossos, Hissarlik and others in the third millennium B.C.; Hissarlik and Knossos again, Mycenæ, Tiryns, Akrokorinth in the second; Athens and her rivals, and Rome and Italian cities in the last; Rome, Venice, Genoa, Naples, Ragusa, Florence, Bologna, Padua, Pavia, Milan, Barcelona in the Middle Ages; Barcelona, Marscilles, Rome, Milan, Genoa, Athens and Alexandria, among others, in modern times, especially since the opening of the Suez Canal. And one might say much more of Constantinople as successor to Byzantium and predecessor to Istanbul, as well as of the various phases of Alexandria. We have here repeated, almost periodic, blossoming of cities of increment with commerce as a main factor, maritime commerce that found an appropriate nursery in the Ægean. Here little boats might navigate from island to island without losing sight of land; here, too, they might rely considerably on the Etesian winds in summer. Nowadays these conditions are of small account, but the Mediterranean is a maritime highway of the nations. Of old the obsidian of Melos, the emery of Naxos, the tin of Crissa on the gulf of Corinth were major factors; now it is the fruits of the Mediterranean lands that are a main basis of the region's trade. But modern through routes from the Atlantic to the Indian Ocean, from the Black Sea to the opener waters, from N.W. Europe via Mediterranean ports to Monsoonal Asia, Australia and East Africa, from central and eastern Europe via Trieste, Fiume, Salonika and the Dardanelles, all now surpass in importance the routes of Mediterranean traffic *per se*.

Yet, as Sir John Myres has so well shown in his booklet (Frazer Lecture), "Mediterranean Culture," the cities with their occasional, almost periodic, rise to affluence and power are set over against a background of the rural poverty of those who have not the resources to plant groves of fruit trees and wait years for a return. And the sharp descent of streams from fold mountains brings mud to be laid on the plains below, so that, especially since forests have been reduced, the drainage of the lowland is poor and gives opportunities for malaria and other troubles that limit initiative and make an over-all organisation hard to build up. The city, whether the city state of Greece or the trading city of the Middle Ages, has long tried to manage for itself, regional organisation has been hindered and has had to face an ununderstanding mass of rural poverty. Still more, in the background are the mountains with their goatherds and shepherds, their transhumance, their wild kinship groups that in Greece and Macedonia to-day are a very discomfiting element in the political problem.

We thus have in the Mediterranean, with a background of rural poverty, a tradition of city life and power. We find a deep division between the representatives of larger power due to the split between eastern and western empires, perpetuated in the hostility between their heirs and successors, the Orthodox and the Roman Church. There is also an inevitable concern of peoples outside the Mediterranean in the routes through it. If we add to this the fact that the Mediterranean is poorly equipped for a phase of world-life in which power for machinery counts as it now does, we realise why the Mediterranean no longer leads, but we at the same time appreciate that some ports on it have grown wonderfully in the last 75 years.

It is to be remembered also that the long-ingrained habit of mind gathering around the city as a centre of culture and of power held back development of linguistic nationalism, so that in Mediterranean lands a common measure of thought and aspiration within a language group can hardly be said to exist, and attempts at conscious national organisation are recent and not very effective.

Were this lecture concerned with more aspects of Mediterranean life it would be necessary to refer to the intrusion and then the regression of Islamic power, which on the one hand helped to hand on a heritage from Greek thought, and, on the other, under the later Islamic invaders, put the clock back in so many respects.

Europe north of Mediterranean lands offers a dramatic contrast to the Mediterranean lands in the matter of village and city. Before men had iron axes they could make only a minor impression on the great forests of oak and elm, but patches of bush and small trees on the loess were cleared in the third millennium B.C., and the loess zones have been important belts of movement and of density of population for a long time, though an increment sufficient for development of cities came late.

The climate here, with its rain in summer (some from thunderstorms) and, east of the Rhine, its weeks or months of hard frost, does not promote evaporation on the scale felt in Mediterranean lands. Dissolved salts are not drawn up to the surface to the same extent. They remain distributed through the depth of the soil in the "brown earth"; and the humus decomposes more slowly—very slowly in the chernozem area, with its long frost and very dry summer. Towards the wetter and colder areas of the north-east and north-west the trend of dissolved salts is more markedly downwards, and bare soil after rain may even look grey; such soil has been called by Russian workers *podsol*. The farming of such soils as brown earth and *podsol* may easily exhaust the plant food near the surface, and it is most important to overturn the soil so as to get the accumulated food from below. The little plough used for the surface scratching in the Mediterranean was of little value save on loess here; and, so long as men were dependent on it, populations were small and cities did not grow in Europe north of the Alps, though one might try to turn over the garden soil with a spade. A larger plough for overturning soil became effective only when the ploughshare could be shod with iron. Probably the iron ploughshare began somewhere in western Europe some generations before the Roman conquest of Gaul, and the Belgæ used it in Britain. But it was

especially the conquering groups of post-Roman times who spread its use, at a time when the iron axe was making great attacks on the oak forests for timber building, ships and other purposes.

A heavy iron ploughshare pulled by two, four or six oxen (references to eight oxen are almost certainly wrong) made a deep furrow and brought up the deeper, richer soil to be laid down by the ears of the plough or its mould-board. A thorough ploughing at the proper season was the important task, not the frequent surface scratching so important in Mediterranean lands. So agricultural routine was different. Instead of the small field of Mediterranean lands there was often the large field laid out in strips (the furrow-long or furlong measured as 40 rods or poles or perches is a memory of this), and the peasant used or owned a strip or a part of a strip. Cultivation had, therefore, to be on one scheme for all the holders in the field. Where this scheme established itself the peasants were typically established in compact villages of a fair size with open fields around them.

There was little in this scheme prompting early development of towns; and one rather finds in several areas traces of ancient earthworks that appear to have been refuges in times of trouble; the old nuclei of Poznan and Cracow illustrate this. As towns until relatively modern times were dependent on local food unless they were accessible by ship, the limited food supplies before the days of the iron ploughshare hindered the larger agglomeration of population. It is of special interest in this connection to note that towns in the Ægean began about 3000 B.C., that only after 1000 B.C. did the idea of the city spread to the western Mediterranean, that only towards the change from B.C. to A.D. have we towns in France and Britain, mainly as a product of Roman influence, and that the idea of the city spread eastward from the Rhine, mainly as an imported idea, not long before A.D. 1000. The fact that the city still in the twentieth century has often been linked with immigrant populations, such as Germans and Jews, in Poland and Transylvania, has been one of the sources of lasting political and social difficulty, postponing the rise of native urbanism fit to take its important share in regional administration, as well as hindering growth of regional unity. The nation as we understand it has not truly developed in east-central Europe. Whether the huge transfers of population of these years will change this old problem our successors may see.

Our wheat variety is a bread-wheat that was developed, perhaps, in lands north of Mesopotamia and that ultimately acclimatised itself in Europe north of the Mediterranean lands. It makes great demands on the soil, but, by pasturing cattle on the weeds of the stubble fields after harvest, the land was manured. With experience it became practicable in many places to have a rotation of wheat, barley and fallow, and, in due course, barley might be varied with oats or beans; and, where there was not sufficient strong sunshine for wheat, rye was planted. Rye and oats very probably began as weeds in wheat fields. The scheme of rotation and the fact that the fields were communally cultivated meant that leadership found special opportunities and lords of the manor arose to power, controlled cultivation, held the mill and sometimes owned the plough. But before going further we must glance at France.

In Mediterranean France conditions are interestingly different from those of most other lands around that sea. Standards of equipment are, on the whole, higher, and the factors of these differences would be an interesting topic for research. Malaria and summer lassitude are reduced to some extent by the presence of hills, and absentee ownership has been less common, at any rate since 1789; and government, whatever its failings, has been better and regional common measure more marked. There are also some more economic factors. For example, all France is near enough to vineyards to like wine with its meals. The Bordeaux area supplies "Grand Vin" for luxury and for export; Languedoc, in its turn, supplies "Vin ordinaire," apart from a few very choice vintages. So there is scope both within France and in its export trade to supply a non vine-growing population with wine on a fairly large scale. And, with skilled cultivation and rapid transport assured by the P.I.M., there is the possibility of "primeurs" (early vegetables, flowers and fruit) and of scented flowers for perfumes to be sold far and wide as they make their name and fame among the luxurious visitors to the Riviera.

Albigenses of the 13th century, Waldenses, Huguenots of the 16th century and onwards, the Marseillaise of the Revolution and many more instances all tell us of an independence of mind and a power of thought that play their parts in the net result in Mediterranean France. There is, nevertheless, a great deal of rural poverty and dejection, with people streaming away from poor lands and sometimes with French peasants being replaced by Italian immigrants. Ariège, Aveyron, Cantal, Corrèze, Gers, Landes, Lozère, Puy de Dome have tended to lose population of late years.

In the Paris basin, the three-field system and feudal lordship of lay or ecclesiastical leaders has been a historic feature; but to understand the peasantry we must also remember that both towns, under the influence of the general revival after the Dark Ages in a region of urban Roman heritage, and villages, largely under Cistercian and other philanthropic effort, were growing together especially in the 12th century. It is partly owing to this contemporaneity of growth that the French peasantry has developed its remarkable close-range exchange between village and town, the latter with a variety of small local industries, the former with few craftsmen save a smith and a carpenter.

Contemporaneity of factors of change is often a matter we must take into consideration along with environmental influences if we are to gain understanding. The case of the French peasantry during and after the Revolution of 1789 is further illustrative in this respect. The feudal lords had often become absentees, gathered at Paris by the king lest they should foment disorder in their home lands. Luxury and degeneration led to their impoverishment and to bad consciences, and greatly promoted the breakdown of the old autocracy, as it did in twentieth century Russia, and in both cases ecclesiastical decadence and persecution were other factors of breakdown. The good soil of France was a heritage to which the peasantry was attached, and, as the autocracy was breaking down, there was spreading the idea of root crops in the fields, parsnips, turnips, carrots, mangolds, and also of potatoes—more food for men and

animals, provided control of the soil could be liberated from the old rotation. Add to this the fact that the root-crops gave winter food to farm animals, and thus allowed improvements of their quality; and we see something of the character of the French Revolution, whereby, whatever else happened, the peasants got hold of the land. Eventually many of them have paid back their purchase mortgages in a depreciated currency, while selling their products at much appreciated prices, especially in war time.

Less difficult soil conditions, less malaria, less summer lassitude, better farm animals and food, more organic manure from animals folded on the stubble or fallow fields—these are some factors of advantages of the French peasantries over against those of Southern Italy or parts of Spain and Greece.

Eastwards across the Rhine we find different conditions and different factors of change. In the first place winter is more severe and one soon gets to a region with one month's, and, farther east, to a region with two months' continuous frost, and consequent stoppage of outdoor work. Indoor work, especially in wood, with minor metal adjuncts, has become an important matter for the winter season, and there is considerable craftsmanship, some of which has been found a useful introduction to the refined machine-making connected with the modern electrical industry in South Germany.

The intricate and varied topography of Germany from Köln to Leipzig and from Frankfurt to Hanover delayed political unity, and promoted the long maintenance of small principalities with the princes, dukes and so on, mostly in residence, maintaining the more or less feudal scheme and the three-field rotation down to the days of railways. Passivity of the peasantry as a consequence contrasts with their stubborn opposition to their lords in France. The French Revolution could not really infect Germany, and yet the German peasant, especially in the south-west, has craft skills beyond those of the great majority of French villagers, and, after immigration to towns, has contributed to industrial development.

When we look east beyond the Elbe we find still other evidences of rural character. On the morainic lands of the Prussian plain early forest clearing just east of the Elbe gave opportunity for founding villages gathered around a green and often a church. The type is so well recognised that it has a name in common use, namely Rundling. As clearing went on eastwards, lines developed in and through the forest and the Rundling gave place to the Line or Street Village, or to what one may call the mere-side village developed from an old fisher-farmer hamlet near inland water. In the forested areas, large hunting estates developed, and some have come down to modern times, but received an important increment of capital value when potatoes and root crops spread generally in the 19th century. Here, however, there was not the large peasant element with local town connections and centuries of experience that France possessed. Rather was it a population of poor hamlet-folk which found scope for increase, but had little experience that would have helped it to seize power, and little craftsmanship through which to express itself. The domination of the land-owning Junkers of Pomerania was hardly challenged until quite recently.

Somewhat farther south on the loess belts from Alsace and Saxony to the Ukraine larger villages, cultivation of grain and so on are old-established. The loess, as Dr. Alice Garnett has been arguing, was probably rich in trees and bushes at one time, but was perhaps not to any great extent covered with great oaks and the like. Probably clearance of its trees and bushes makes regrowth difficult in parts like the Pusztá. It seems to have been easier to clear; its friable soil was certainly easier to work than most of the boulder clay farther north. Here, then, might have occurred a richer development, but we are here in a zone that received the idea of the town through German and Jewish immigrants among a Slavonic-speaking peasantry. The division of language and often of religion, as between German Protestants, Magyar Romanists and Slavonic Greek Catholics (Uniates) or Orthodox is still and has long been an obstacle to regional unification, as the transfers of population after June, 1945, so tragically show. Associated with this, and with the remoteness of many villages from any town, we find the remarkable vitality of peasant crafts sometimes in individual homes (weaving and furniture), sometimes in villages (timber generally), sometimes in villages and very small towns (pottery).

It is important to see this, not only as an economic factor, but as a supplementary job, especially for the winter. It is also a mode of expression, and we have in this area an almost unselfconscious art, with styles that involve traditional loyalties rather than deliberate decisions, though individual fancy finds play somewhere at every turn. The shepherd may carve a wonderful distaff for his sweetheart, and she may embroider for him the skirt of a shirt he will wear outside his trousers; while he, with his tougher fingers, embroiders sheepskin coats for them both. Weaving of rugs, skirts, sheets, blankets, house-building, especially in wood from the local forest, curing of skins for shoes as well as for coats—a multitude of home and village crafts have survived into the 20th century. One has watched aniline dyes ousting garden products, factory yarn competing with the housewife's spinning, the transformation of the beautiful old distaffs more and more into museum pieces. The old art is threatened from many sides, and, with its decay, more of the social life will change than is sometimes imagined—the gifts gathered around social events and festivals, the winter occupations, the old exchanges of goods and services, many an old custom and superstition. But, unless care is taken, there is likely to be a loss of productivity of the land as the, often alien, aristocrats fade out. Moneylenders step in. Winter supplements to the penurious livelihood are likely to diminish. More than all this, the self-contained village life has given very little experience of the outside world to its people, and they are easily the victims of political bosses and organised groups of various shades of opinion, a prey for party autocracy.

If, instead of working eastwards from the Rhine, we go northwards, the human scene changes. Denmark and South Sweden might grow grain under some kind of old rotation system, with lords of the manor in more or less usual style, though hardly so rich and powerful in these more northerly lands. But, in this cooler region, oats were at least an alternative crop as food for man and

beast, and some have claimed that rye, appropriate in the north, is less exhausting for the soil than wheat. Moreover, in the north, the downward trend of plant-food in the soil is more marked, so there is more reserve to be ploughed up. As oats are in the soil for only five months or so, there may be more time for stubble pasture while the snow is not too deep or the temperature too low. The soil used for oats has longer to rest, the rotation scheme is less essential, the baronial control less important and less powerful. And the villagers may have a line of escape to sea or to fishing in the many lakes and streams; they are less passive than so many south of the Baltic have been. These few remarks may give a background to the study of the transformation that has been enacted in modern times. How far that transformation should be credited to environmental and how far to personal and historical factors one cannot say; they interact all the time.

First let us note that, being far beyond the old Imperial Roman frontier, they naturally seceded easily, and without much bitterness, from the Empire's descendant, the Roman Church. They as naturally accepted the Lutheran ideas from across the Baltic and were thus led to emphasise the use of the Bible in the vernacular, with all that this meant in educational and nationalist directions. Denmark had compulsory general education in 1815, we in 1870. The growing of grain became less profitable after about 1870-75, but, ere that happened, the Danes had followed Grundtvig's advice in organising folk high schools. And the villagers themselves, with their new education, quickly organised the co-operative system for buying and selling objects and products the farmers produced or needed. No doubt a purely economic geographical factor helped, namely, the Esbjerg bottleneck, through which passed a large proportion of the farm products exported to Britain. But here is a peasantry renovated, and the result is one in which they have themselves co-operated. It is a renovation that has greatly increased their regional and national consciousness on a scale far surpassing that of the village. The co-operatives are not matters of party or sect as they so often are elsewhere: they are national. And, if it is fairly true that traditional peasant crafts and arts are not very highly developed in Denmark (they are more so in Sweden), it is also true that the new education has spread among the peasantry social activities, especially for the winter time; and Denmark is fortunate in that proximity to the sea does limit the cold period, so that outdoor work can go on for a good part of the year.

What is most characteristic of rural Denmark is that the contrasts one so often finds in Central Europe between peasant and townsman are much less marked. The folk high school education, of women as well as men, the co-operative system which has grown from the folk high school education, and the scientific interests developed through improved farming have deeply altered the old-time mentality. A contributory factor has been the effort of the Danish Lutheran Church to become catholic in the sense of being comprehensive rather than authoritarian; nearly all rural Danes are at least nominally Lutherans. And, as it is the people themselves who created the co-operatives, the people

have come to feel that the new social order is their own creation rather than something given to or imposed on them.

On the fringes of Europe, towards the ocean, north of France, wheat is a risky crop in many areas because of the possibility of heavy rain in summer. Spring corn (barley and oats) becomes more important, save in parts of England, and it occupies the land for only the spring and early summer months, allowing time for pasturing cattle on the fields and so for getting them manured. In Ireland, Wales, Scotland and Norway there is much rough grazing, and therefore less need for a fallow field. The rain makes land-drainage, by ridges and furrows, more necessary than in many other areas. Patches of arable, where possible in shelter from gales and with a southward aspect, make the nuclei of farms, which, in Scotland and Ireland, might be held conjointly by a small number of farmers, usually kinsfolk. A few such groups might have their habitations linked together in a hamlet, and a few hamlets adjacent to one another might form a clan under a leader for war. The arable field divided often into ploughridges, that might be allocated year by year or might be more definite property, could be cultivated by co-operative ploughing. Of the other land belonging to a hamlet some might be taken care of to a certain extent and cultivated in patches changed every year or every few years; and the patch to be cultivated next might be used beforehand for folding cattle. Other land was typically left as rough pasture.

In Wales the co-aration of a farm by a small group of co-heirs, which often obtained in Scotland, was abolished in Tudor times, and, in the late 17th century, sheep-keeping and wool became very important, but there are traces of former ridges, perhaps even of the three-field system in Flint and Denbigh, Cardiganshire, Pembrokeshire and Glamorganshire here and there.

In Norway the relation of the small patches of arable near fjord-shores to the custom of primogeniture-inheritance, to fishing and to the summer pasturing of cattle on the heights has often been described.

Main features in oceanic European rural tradition are therefore the importance of animal husbandry and rough pasture, the subsidiary character of wheat where it is grown at all, frequently the sea as a means of employment and escape, the weak development and regional absences of the three-field system. The stock farmer typically lives very close to his animals with less taste and need for equipment than the wheat grower. His groups are smaller, his market towns simpler and farther apart. The contrast between the so-called Celtic fringe of Britain and the English Midlands is a striking fact of British life.

The contrast between the large open fields of Midland tradition and the old enclosed fields of the south-east is another matter that can be partly interpreted through clues given by historical geography and archæology. The Belgæ appear to have had fairly large ploughs; they came, in all probability, as military lords over an earlier population, and that population, no doubt, had its enclosed fields after the old style. The new lords may not have had the open field and strip system in their experience; we hardly know how early that developed. In any case they came into a British system. If Fox is right in treating the great finds from Llyn Cerrig Bach as indicating gifts from many

parts of Britain, including the south-east, to a sacred centre, we may suppose that the old system went on after the Belgic conquests. Cæsar's text suggests the same view. This possible sequence may help to interpret the rarity of the open field and strip system in the south-east compared with its one-time widespread occurrence in central England where the Roman invaders found a much less developed British population; also their withdrawal presumably left that region in utter weakness. By the time the Anglo-Saxons came the open field and strip system was developing, and, in a relatively empty region, there was an opportunity to impose it, and, in many places, the compact village with it.

Modes of agriculture, types of plough, forms of rural settlement, schemes of land tenure, crops, soils, climates, are all linked in intricate fashion and need to be studied regionally as well as generally.

A few points concerning cities in Europe north of Mediterranean lands are relevant to the purpose of this study. Roman cities were founded in Gaul and Britain, and, generally, as far as Rhine and Danube. The Celtic-speaking Belgæ had probably something of the nature of towns in Gaul and Britain a few generations before the Romans came, but after ideas and material from the Mediterranean of classical times had infiltrated into the west. The fact that many of the Roman cities had Christian bishops in them before the empire fell helped those cities to survive and determined some directives of their revival after the barbarian lapse. The Gallo-Roman cities remained linked with Rome and had a bishop interested in their revival. The cathedral or town church is on the central square or market place, the craft streets, the walls and gates, the smithfield outside the town in one direction, the tanneries near a stream in another and the fairground sometimes in still another, often with an abbey (Benedictine in many cases) near the fairground, and a church dedicated to St. Giles for the wandering merchants. (St. Giles at Edinburgh is in what was the strangers' location beyond the little old town clustering under the castle.) The growth of towns at the same time as the multiplication of villages in forest clearings in France in the XIIth century A.D. helped to make the French town a focus of a little region or *pays* which it supplied with craft goods. That system of town and country close-linked has persisted with minor alterations to our own day in France. It is accompanied by the idea of local production of many types of consumers' goods, and the idea of export trade as a surplus matter, sending out specialities such as wines, perfumes, silks, jewellery and the like.

The French provincial town and its related *pays* are in a way the strength of France, and in another way its desperate problem in an age in which mass production and machinery count so heavily. This is the more difficult in that French iron ore in Lorraine has gone to Ruhr coke— it is less bulky than coke and less deteriorated by travel. So this large-scale industry aggravates the international problem.

The towns of Flanders and those near the Rhine typically have the Town Hall as their centre, whereas only a few French towns, away from the north-east border, have old town halls. The central town hall usually means that the leading citizens in the Middle Ages were able to stand for themselves against

the ecclesiastical nobility. Brussels, with its hotel de ville, its guild halls and its maison du roi on a central square is a classic example here.

Beyond the Rhine eastwards towns developed from the 10th century onwards, sometimes under ecclesiastical and sometimes under military leadership, sometimes with a permit gained by traders from a local prince or the emperor. Planted down usually by leaders from the Rhineland or influenced by the Rhineland, often boasting special courts and laws, they have not been so closely integrated with their immediate surroundings as the French ones have been. The physical geography of the tangled valleys east of the Rhine and north of the Main has preserved many small local sovereignties, at least nominally, until the 20th century, so court cities with their attempts at æsthetic activity helped to set the fashion, and the contrast between peasant and townsman is the more marked as a result. The power of the mediæval trade guilds, inevitably at that time with ecclesiastical linkage, made for the ostracism of people such as Jews whose religion kept them apart. The ghetto and the grim story of persecution is too well known to need comment. It illustrates the difficulty of social combination, and helps to make clear the desire of the Jews to escape eastwards as new towns grew in that direction.

It has been highly characteristic of Germany that, with coal near the northern fall line from hills to plain, the old cities of that fall line have become industrial centres, sometimes with common lands still public property and the city treasury reaping much increment. The contrast with British industrial cities, often previously quite small and not even incorporated, strikes every observer.

The spread of cities east of the Oder and of the Böhmer Wald brought further problems, especially that of a difference of language, sometimes of religion, between peasantries and townfolk who may have been conquerors, and have been in any case apt to suffer from a superiority complex. The city may have an original nucleus, once a fortified enclosure, as at Poznan, Cracow, Prague, etc. A great rectangular lay-out by traders under German influence is characteristic, and its market square will have the town church and town hall (or cloth hall). German, Slavonic and Jewish quarters indicate the weakness of the common measure among the citizens. In Transylvania, the migrants of the early Middle Ages from lower Saxony (one thinks of the story of the Pied Piper of Hamelin) planned and built on a smaller scale and with a nostalgic reminiscence of the old home, as one cannot but observe at Sibiu and Brasov. They have held to their German tradition with great tenacity and remained in 1939 as "foreign bodies" in the Transylvanian complex. It is interesting to compare with them the bastides founded under Edward I in Wales—towns such as Conway, Carnarvon and Aberystwyth. They were laid out on a rectangular scheme under the protection of a castle and they were for English and not for Welsh people. But the old prohibitions faded out under the Tudors, and intermarriage helped to make these old towns as Welsh as any others. In our island environment, so long free from threat of military invasion, it was more possible for hostile confrontation to metamorphose into a working, if rarely

a logical, compromise than in a country into which one or other great power might pour armies at any time.

The immense modern development of urbanism began in some parts in the 17th century and in many in the 18th century with land owners coming to spend winters in town and get their daughters married. We know in Britain many fine Georgian houses and can trace the process in Wales, for example, on into the early part of the 19th century. It is a process very different from the industrial massing of factories and dwellings. In some parts of Europe little of all this went on until the railway appeared, but, whenever it started in any region, it has gone on with an acceleration that made deliberate planning most difficult.

In Germany the multiplicity of little and big court cities no doubt hindered the growth of a large unity. On the other hand it fostered an element of taste and of show in German cities. Moreover, the industrial towns were fairly often old cities with proud traditions, owning their common lands and getting some of the increment of land values for the city's treasury. The municipality might be strong enough to direct the railway as to how it should approach or enter the city. Old lines of walls might become tree-lined promenades, and a feeling for cleanliness was a natural accompaniment.

In France the mental background of modern urban development has been different. The long struggle between royal and more localised powers in France in the Middle Ages emphasised the central authority and, with it, the city of Paris. The other cities, except Lyon to a certain extent, have rarely had the artistic activities of the corresponding (and usually larger) towns in Germany. On the other hand, they often have a more intimate link with the adjacent countryside, though this may be reflected in a lower degree of cleanliness. But the French are great road-makers, and we find, again, the tree-lined promenades of the old ramparts.

In Britain we have the towns which grew with residential quarters in the 18th century and those that have grown with 19th century industry, often from nuclei that had no corporations to control them, as was the case with Manchester, Liverpool and Birmingham. The growth of towns on privately owned land with increment going into private hands, the ugliness and dirt, disease and degradation are too sadly known to need discussion. The fact that the towns just named did not have a mayor and corporation before the Victorian era had, however, had the effect of making it more possible for religious dissenters to have a measure of freedom in them, and, in this way, the industrial towns had acquired nuclei of sober, industrious men of initiative who played a considerable part in industrial development.

The growth and character of villages and towns and of their mutual relations is full of interest for those who will think of them in terms, not only of site and statistics, but also of the play of variously conditioned human minds.

III

THE COMMON MEASURE AND THE COMMON MULTIPLE AMONG MEN

IN the first two lectures it has been my aim to illustrate the work of the human geographer who tries to study his fellow men and their problems through direct observation. The maps of human distribution will be increasingly seen to be related to maps of relief, climate, vegetation and so on, but it is of the utmost importance that we should not argue too directly, too restrictedly, from the environmental to the human features. Time-factors come in continually, and we are dealing with a being who can transplant experience in a unique degree. Neither the bastide towns of Wales nor the German cities of Transylvania are in any real sense the children of their immediate environments; both result from deliberate transplantation of experience gained far away. Indeed, in a sense one may say the same of the idea of the city anywhere in Europe north of the latitude of the Alps, now the region of the world with the greatest proportion of very large cities playing a dominant part in the region's life. To name only aggregations that passed the million mark before 1939 we have London, Glasgow, the Manchester group, perhaps the lower Mersey group, Birmingham, Hamburg, Berlin, Paris, Warsaw, Moscow, Leningrad. And several others were not far behind. So it is obvious that the idea of the city, in the main an imported one, has lived itself into the environment of Europe in latitudes 50° — 60° in most impressive fashion. The proportion of the above list which is British is a serious fact for our little country, and warns us how far our industrial experiment and its temporary success have led us on to attempt to maintain what our grandfathers built up under conditions very different from our own. More and more, with development of transport, with inventions of synthetic products, with transferable machine power, with artificial atmospheres and a wider spread of knowledge and skill, it is found possible to locate an industry almost anywhere. Localisation factors are still in action, but less than of old. And do we not sometimes ascribe too much to localisation factors in the past? An interesting instance was brought to my notice recently; it was that of the iron industry of the triple Yangtse city, Hankow, Hanyang, Wuchang. There is some coal not too far away in one direction and some iron ore not too far away in another, and apparently both were recently brought to the industrial centre. But an investigator claims that, while this may help to account for the persistence of the industry there, its foundation is due to quite different causes. A provincial governor of Canton arranged to buy smelting equipment from Europe, but was transferred to Hankow before it was delivered, so he set it up at Hankow instead of at Canton; and for some years, moreover, both coal and iron were brought

from a long way off, before the nearer sources were opened up or even discovered. Swiss watches are rightly renowned and are sometimes said to be a product of the winter crafts of the peasantry, but the importation of Huguénot enterprise and initiative working under pressure of need is probably a large factor here, as it is in the rise of Berlin and of a good deal of British industry. It learned to fit itself into various environments, and industry owes some of its success to this, but the imported heritage is important here, as it of course so obviously is in the new lands—N. America, Australia, New Zealand—of European occupation. It is further noteworthy that not only positive heritages, but also negative ones, have been carried to distant homes. Emigrants of dates later than about 1830 have maintained an abhorrence of the idea of subsistence-farming; and the majority of people of British tradition in English-speaking North America are in this way strikingly contrasted with the French Canadians. But let us realise that the abhorrence is also felt by Irish, Italian and other emigrants of the later time. In some cases the abhorrence had its rise in the European country of origin, in others one suspects that it has arisen by contagion in the new home. Among the factors involved has been the opening up of the Middle West grasslands from about 1830 onwards, drawing men from old farms in New England to the bigger chances of the states of the Mississippi basin. And this opening up in its turn was closely linked with the increase of equipment and mechanical power that was developed in the early stages of our industrial revolution.

At every turn we find interwoven environmental factors and factors of human initiative at a particular time, based, it is true, on experience, and so in a measure ultimately environmental. Environment, experience, human vigour or the deficiency of it, high or low birth- and death-rates are all involved. We who try to study by direct observation are committed to co-operation with others who study records. There is no separation of studies in Humanism; there is only diversity of approach, of method, of emphasis. It is this feeling which I have had for many years that makes me hesitate to speak of Geography or of Human Geography as a separate subject with definable limits any more than History and Anthropology can be so described. I know that, in Human Geography, French thinkers have attempted to set forth a subject with foundations or principles. Vidal de la Blache, the greatest master in our field in modern times, Jean Brunhes and Maximillien Sorre have all tried. I cannot think any of them has made a real success in this particular line, and I do not think it is a line to be followed. I think we, like the historians and the anthropologists and the economists, must learn to co-operate more fully than was sometimes the case in the past. May I venture to illustrate my point from the mistake made by a noted non-geographer referring to China in a public lecture and saying that "the great plain of China stretches from Peking to Canton." He had looked at a map with colours in green and brown, but had not noted at what height the change of colour came, nor had he any conception of the relief of the country. Another famous non-geographer, who was to speak on international relations, was nonplussed by a map that was orographically coloured, though it had political boundaries conspicuously overprinted. "Let

me have a real map with Russia in green and Germany in red and France in yellow" was his request. They were, one fears, mere power units to him, as they seem to be to so many writers who let themselves be drawn away from the study of the opportunities and difficulties of the millions into the criticism of the schemes and ambitions of power groups, however these matters may be related! We read of the intentions of Prussia or Austria, France or Russia, at some period or another in history, but the writers of the books often are not at all explicit about the way in which the actions of the ruling group concerned are conditioned by the experience, the cultural heritage, of the people over whom they have a certain amount of power. In 1860-1870 it seems to have been thought that one had but to establish a parliamentary system and it would work. It was a plant specially bred in Britain and it was the British variety that was transplanted—to Italy—with very poor results. The politician was not taking into account features of the Italian heritage discussed in the previous lecture.

Recently one has heard eloquent advocacy of a European federation, sometimes with the comment that it has worked successfully in Switzerland. The success of Switzerland is certainly a great fact of European life that gives a ray of hope on this dark and stormy day. But let us look into it more closely.

The small groups inhabiting adjacent valleys in the high Alps bound themselves together for defence by the famous Eidgenossenschaft, or Society of the Oath, and, broadly, they kept their oath and fought and repelled Hapsburg interference. Each valley was almost self-contained, none was impelled to intervene in another, all were of the same language and religion, all had the same economic life and status. In other words, there was a very high common measure between them, almost an absence of jealousy and motive for interference. So the Swiss experiment took shape and made local autonomy its great feature. In the succeeding century towns of the Swiss plateau asked to enter the Society of the Oath, Zürich, Zug, Bern, Luzern. They usually had revolted against feudal lords and could be looked upon as fellow-workers, urban in this case it is true. They were of the same language and religion as the men of the forest cantons. The common measure was still high, though economic activities of the originals and the incomers were divergent. One feels, however, that the men of the forest cantons near such passes as the St. Gotthard soon saw that the trading cities needed to use the passes and could bring profit to their controllers. The Bund, as the Society of the Oath came to be called, took over sometimes by conquest, sometimes by request, stations and territories both among the Alpine passes and at the Rhine crossings. It nearly broke when the religious schism came—but not quite. A Swiss village with a mediæval church has thought out a scheme which shows the strength of the binding force in spite of the religious division. The chancel of the church is allocated to the Roman Catholics, who sit in the nave for their services. Times are adjusted, and, when the Protestants get their turn, curtains are drawn across the entrance to the chancel. The same pulpit serves for both types of sermons! The Common Measure was high enough to make possible this active toleration, this measure of mutual accommodation and

recognition. Eventually the Bund came to include a large number of French-speaking peoples; its heritage was strong enough to stand even this difference of linguistic and cultural features; it had had experience of linguistic differences on a small scale with the Romansch of Graubunden and the Italian of the Ticino. But, when at times further additions to the Bund have been suggested, it has at once become evident that the structure has its delicate joints! Some addition would, perhaps, add unduly to the German-speaking or the Italian-speaking, to the Protestant or to the Roman Catholic element, and the balance to which all are accustomed would be altered and the now old-established feeling of safety from domination would go. Federation has grown up in the course of six and a half centuries to include people diverse in language and in religion, in equipment and in economic activities—but it has grown up step by step and the common measure of the participants was high until the Bund was well established with a proud history and even a famous myth of its own: the story of Wilhelm Tell.

The study of the common measure among peoples is a matter to which too few students have given attention. Nor have we tried sufficiently to see how it could be increased and the risk of war thereby diminished. If one could send more young peasants to Denmark and spread the idea of folk high schools and national rather than partisan co-operatives, that would, perhaps, do a little to develop a common measure where unfortunately practically none exists. If one could spread the use of one and the same book about the life of Europe in the High Schools and Colleges of various countries that might again do a little. If international competition in commerce could be avoided without the establishment of paralysing restrictions, that might do a great deal, but it is a problem that becomes harder and harder as governments take more and more interest in the direction of trade. Probably we must go through this phase to find a way to get above its drawbacks. The old *laissez faire* would not help even if we could go back to it, which from many points of view would be absurd.

I have spoken of the high common measure that helped the Swiss Bund in its early days. But let us realise that, had it not acquired a good deal of variety, it would probably have withered. Its common multiple would not have been great enough. In the long run, for growth and health, the common multiple is as important as the common measure. Unity based on uniformity may be useful as a germinal factor, but unless it can become unity in diversity it runs grave risks, especially in the modern world, in which no group can live unto itself without becoming sick unto death, sooner or later.

The common measure and the common multiple among a people need to be cared for by those who hold responsible positions, whether in government or in any sphere of leadership. May I ask you to think with me of our great neighbour France? Her common measure has as its basis a measure of Roman heritage from the Old Roman Empire and its daughter, and, in several respects, successor, the Roman Church. Celtic speech current in pre-Roman Gaul was to some extent cognate with Latin, and was for that reason able to melt into it. The Roman Empire brought the idea of the city to France, and the Roman Church helped to keep that idea from complete collapse in the dark ages.

When revival came in the eleventh and twelfth centuries, as discussed in the last lecture, a great deal was added to the common measure of the French people, at least in the Paris Basin, by the growth of the towns at the same time as villages were spreading in forest clearings and on other types of intake land. A social pattern was brought into existence—a common language and religion, a common mode of life in groups of agricultural villages linked with a local town and its craftsmen and market. It was a pattern that was to persist, perhaps, beyond its limit of usefulness, a pattern so firmly fixed that it needed fierce revolution to upset, even to modify it seriously; for we should realise that the relation of village and local town, the peasant mode of life with what are virtually peasants in both village and local town, remained till recently much as of old apart from removal of feudal lords. When the Renaissance came to France in the 15th and 16th centuries it found the Roman heritage a strong foundation on which to build, and French life became even more deeply imbued with Roman elements as its literature and its architecture of the time so notably show. Clarity and precision of expression, with the ever-recurring desire to argue from supposed first principles and the consequent perennial difficulty in making a reasonable compromise—these have been, and still remain, cardinal features of French life, limiting the value of the common measure, which undoubtedly persists nevertheless. In particular, that devotion to argument from supposed first principles hinders people who have diversities of attitude from coming together on the basis of matters that are really agreed between them. One might say it limits the value of the common measure partly by hindering the creation of a sufficiently widespread common multiple.

The common measure in France was diminished dangerously when large-scale heavy industry was almost forced by circumstances to develop in Lorraine, for it needed Ruhr coke, and was drawn into sending much of its ore to be smelted at Essen because it was more economical on several grounds to take the ore to the coke than to bring the coke to the ore. The Ruhr needs Lorraine ore as much as Lorraine needs its link with Ruhr coke. How to achieve this without too greatly damaging the common measure between Lorraine and the rest of France or that between the Ruhr and the rest of Germany is the almost insoluble problem of Western Europe.

But the case of the French people has other aspects, too. The peasants, for a while, welcomed the depreciation of currency after 1918. They repaid mortgages in depreciated francs which they received in quantity for their produce. But as time went on the costs of defence and administration rose to astronomical figures, while the village folk still clung to their minimal disbursements and used exchanges of goods and services when possible. So a cleavage between the bureaucracy and the peasantry developed and played its part in such problems as that of the mechanisation of the army deferred and defeated by conservative opinion in 1934. It is by having a picture of a peasantry, and in particular of the French peasantry, that we best approach an understanding of our neighbour's difficulties of the last 30 years as well as of the next 30. I might add a good deal about the population problem, but will restrict comment to the remark that parts of France have a quite sufficient birth-rate, even a

steady increase of population; the deficiency is not almost universal as it has been amongst us and in Sweden. It is true that juvenile death-rates are high in a peasant population in both village and town, with summers as warm as those of France and winters bitter in several regions; but nevertheless, with minor adjustments, a reasonable equilibrium could be attained apart from the severe war losses.

The common multiple in the case of the French people was unhappily limited by ecclesiastical intolerance which persecuted religious minorities as long as it had the power, and thus limited vitality of thought until thought broke its bonds in violent anti-clerical attacks. Variety around the fringes of a high common measure is a most important factor of social health, and one which is being too much overlooked in our time, as it also was in the days of the wars of religion of the 16th and 17th centuries. The loss of the Huguenots was, in the long run, a disaster to France, the exiling and forcing into concentration camps of dissidents of one sort and another in several lands is going on even now, after the war and the defeat of Nazism. It gives grave forebodings for the future of Europe.

It may be of interest to think for a few minutes of this matter of common measure and common multiple in U.S.A. The varied origins of the 140,000,000 people and the decline of the "Mayflower" element in the population both make the maintenance and development of a common measure among the people a little less certain in spite of the fact that English speech is established all over the States, and is the medium of education, so that a good deal of what grew from the "Mayflower" traditions and Virginia and Pennsylvania is handed on and has become in this way vitally important. So far the common measure as between white and coloured remains dangerously low. The common multiple, on the other hand, is high in some respects, with Scandinavians, British, Irish, Dutch, Germans, Poles, French, Italians, Africans, all contributing; but many of them forget their pre-American culture heritage, and only very slowly filter into the richer parts of the American spiritual estate. So we find large numbers with little to contribute to the common multiple save in the narrowly economic field. When, however, we realise that little more than a hundred years have elapsed since Man pressed beyond the forests of the eastern half to any serious extent, we see that a great deal has been accomplished in assuring a common language and a principle of religious tolerance over vast and diverse regions. The floods following destruction of forests, the dust bowls of the prairies, the salting of irrigated lands, the silting of power reservoirs and many other difficulties are due partly to the narrow economic outlook just mentioned, but partly also to another feature of American life.

It was a help in developing social life in a new country like U.S.A. if the restless and the malcontents had an escape way open. So we have the well-known saying, "Go west, young man." And the open west had a lot to do with opinions and policies in the last third of the nineteenth century in Europe. Movements of population need to be studied, not only statistically, but in their social relations as well. In Europe's case the escape way was to distant newly opened lands giving opportunity for individual enterprise without necessary

fixation. The implied open economy made for individual adventure free from governmental control. Note the very different circumstances of the peopling of S. Russia and of Asiatic Russia, areas continuous with that of the homeland of the Muscovite autocracy, and under its military and political direction.

Now the westward spread in U.S.A. is changing its character. Few large areas of easily usable lands of value remain unoccupied; wherever one may go one is more generally forced by circumstances to become a member of a community, and the communities have their problems of maintenance in addition to the troubles already mentioned. The people out west need government-planning, they will soon need social security devices, if they do not need them already. And all this affects not only U.S.A., but Europe, for immigration has been controlled for more than 20 years, and the escape way so much used in the 19th century is no longer free. One may leave it to others to argue about social and political results of this world change and about the possibility of resumption of emigration from Britain to the newer lands. But we must observe the facts of movements of population and their social effects. And we shall have a great and tragic opportunity for study of this kind in the next few years regarding the displaced persons in Europe. Let us hope that those who study such problems will not be content with statistics alone.

There is another field of study in which emigrants and displaced persons form an important element. What do they take with them in various cases? How long does the contribution carried from the old home remain distinctive in its various aspects and under various circumstances? The Saxons emigrating to Transylvania in the 13th century kept up distinctive features of house and general architecture, as well as of language and costume, at least until 1940-44. They came into what was a rural world of rather rough transhumant shepherds with some cultivation of the soil. They built cities and showed themselves more skilled and better equipped than their Roumanian neighbours. In other words, they considered themselves superior, and those circumstances of interrelation nearly always mean that the people who consider themselves superior both cling to their old heritage, and, to some extent at least, try to limit intermarriage with the people round about them. Here, then, is persistence of a great deal of distinctive character through six and a half centuries, a long and heavy hang-over! But it is neither so long nor so heavy as the hangover that is one factor of the caste system in India or that which characterises so many Jewish groups.

In U.S.A. the children of immigrants often manage to assimilate themselves to American character, and consider the life of their new country superior to that of their old. The assimilation goes more slowly if the immigrants continue as an organised group and especially if they have some ceremonial of their own. Thus the "Pennsylvania Dutch"—more correctly Deutsch—in many cases descendants of German immigrants of the 18th century, having organised their own settlement with their own worship, are still in a considerable degree distinct from their neighbours and differ from many more recent immigrants in that, having come when American life was just developing, they felt themselves the equals of their neighbours and were not concerned to forget their old ways. Very generally one would find that the attitude of immigrants

towards their new home is one of the most important factors in determining the extent of the hangover and its duration, as well as the way in which assimilation to their neighbours proceeds if it does occur. So much of the world is in transition socially that such studies are not only scientifically interesting, but also of great practical value, if pursued by people with experience of contact with diversities of experience, and with good experience of the language and ritual of the people they are studying. The cases of attempted enforcement of assimilation and of the resistance it calls forth offer other interesting fields of study, the very notable case of Czech resistance to Germanisation being a specially significant one.

It seems probable that few general rules can be stated—each case has its peculiarities. All we can say, more or less in general, is that when a language has reached the stage of writing, that is, of expression of complex ideas in a form intended to be durable, it will change slowly unless the people in transition have an active wish to change, as has been the case with some groups in U.S.A. and other so-called new communities. If, again, a ritual has reached the stage of becoming organised and taught by guardians, such as a priesthood with definite arrangements for succession, it will resist change strongly, unless, again, the people concerned have the desire to change. The Norsemen coming to the French coast at the dawn of the Middle Ages intermarried with the people they found and soon acquired the desire to change, and, as a result, they became great church-builders and protagonists of the culture they were assimilating. When, again, their descendants conquered Britain they intermarried with the English, and their grandsons became English-speaking Englishmen. In Ireland, again, many Anglo-Normans became deeply imbued with Irish tradition, again through intermarriage. We have no hesitation in saying that intermarriage is one of the most effective methods of assimilation of immigrants, for it is usually the men of the immigrant group who marry the women of the native population, and the mothers' influence on the education of the children must count for a great deal. That it has done so more effectively since language became more definite, more clearly associated with ritual and ceremony, seems to be widely true, but, here again, generalisations are subject to many reserves, and it is more important to understand a case deeply than to seek for general laws.

I have been trying to plead for the study of peoples as thinking social beings, not forgetting their economic activities, but remembering Keynes's plea for looking upon economic matters as secondary. I have tried to avoid generalisations and schemes of classification because both tend to run off into abstractions and away from reality. I have sought to show that the environment of a people has a complex influence and yet is not uniquely and directly dominant in many instances. It may influence the vigour, the health, of immigrant peoples and so lead them to have greater or reduced energy, ability to make organisation and equipment more elaborate, or lethargy and perhaps despondent inactivity in face of changes beyond their capacity. I would end, as I began, by pleading for the search for understanding of ourselves and our fellow men.

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