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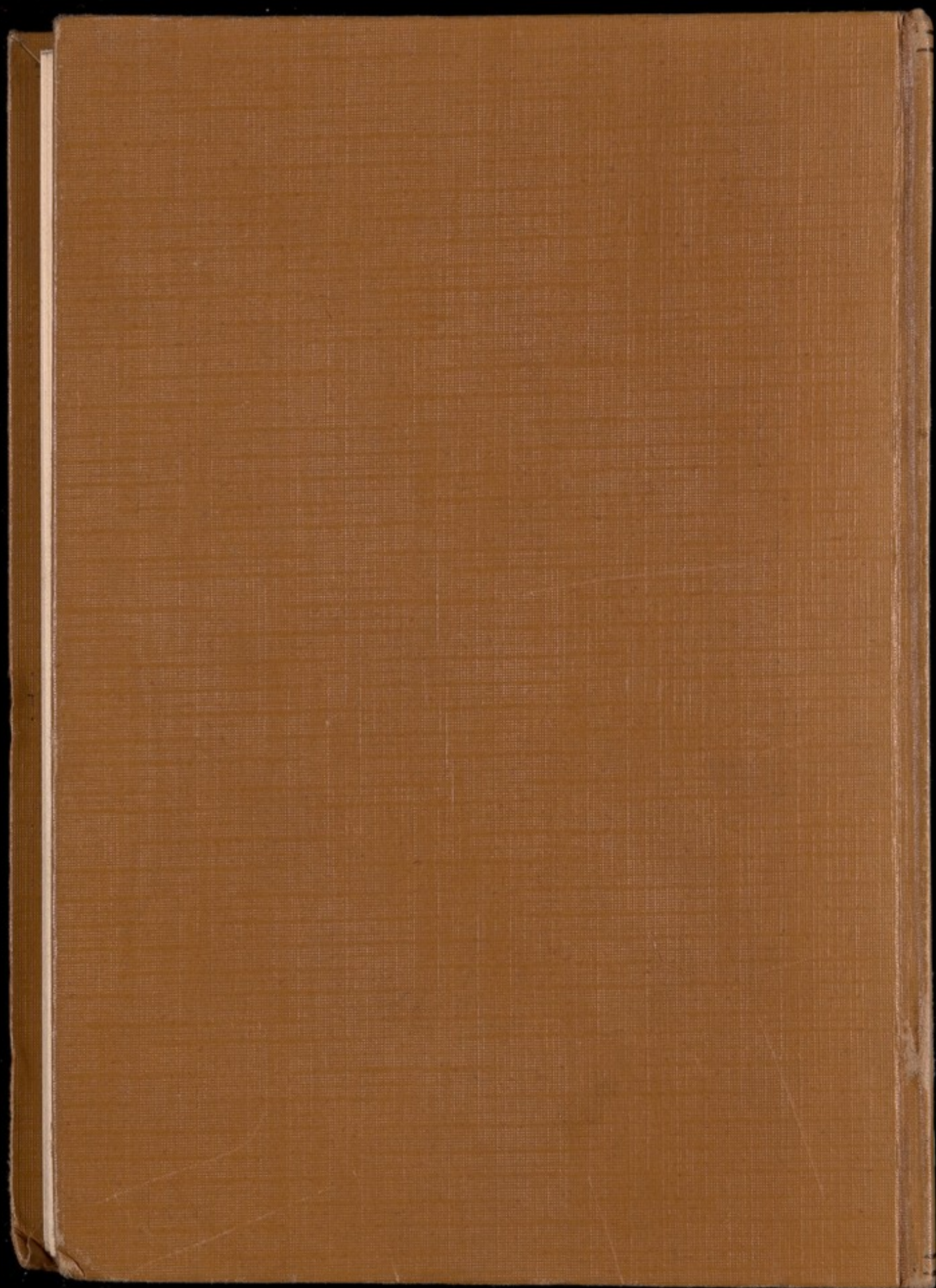


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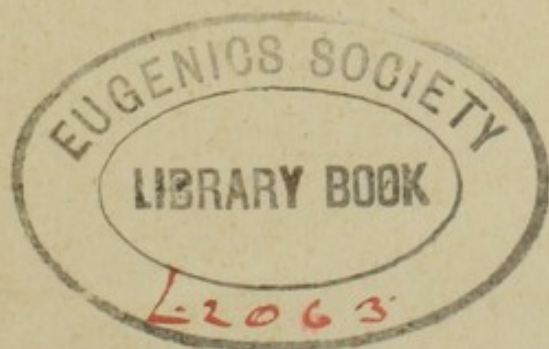
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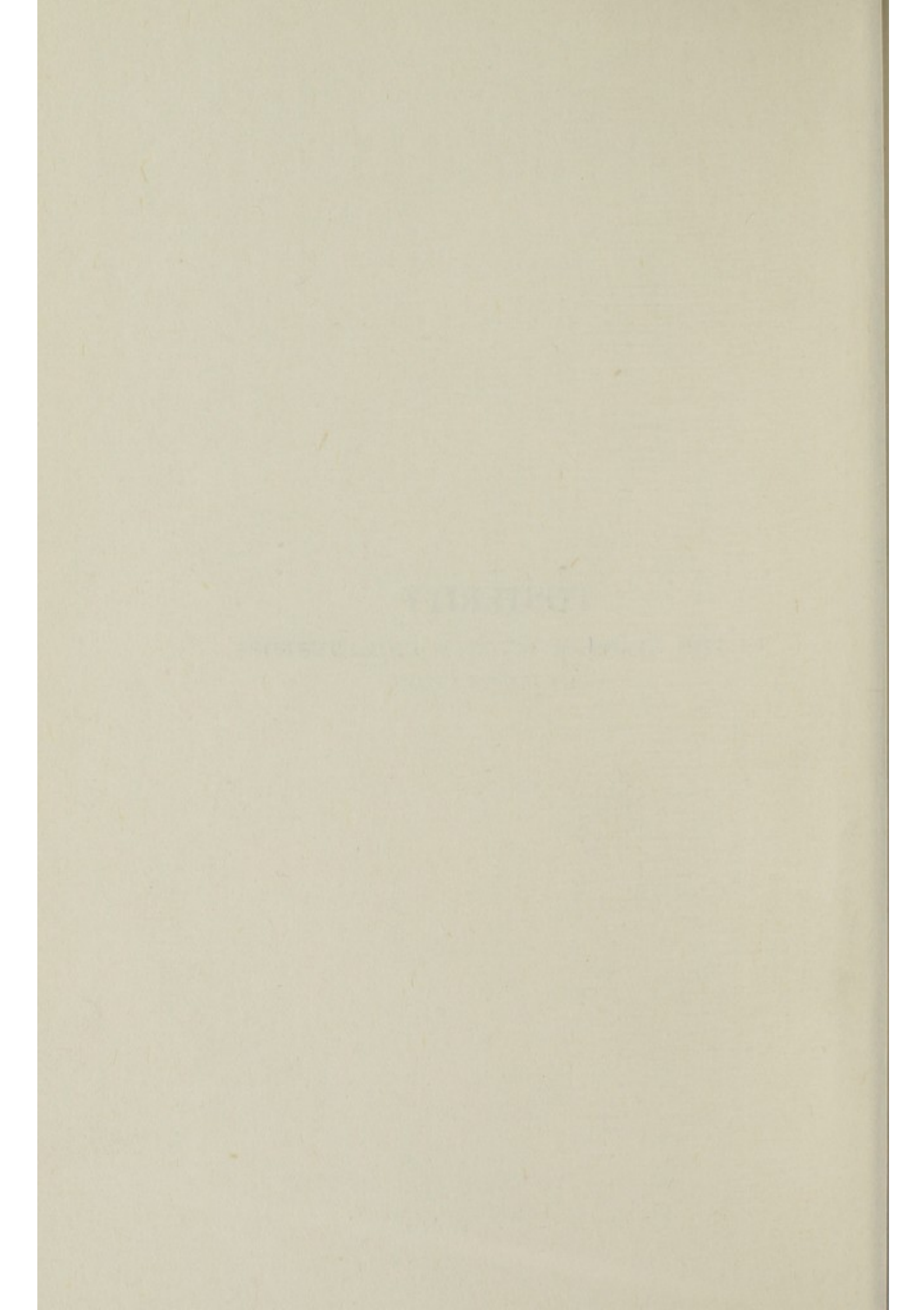


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POSTERITY

IN THE LIGHT OF SCIENCE, PHILANTHROPY,
AND POPULATION



POSTERITY

IN THE LIGHT OF
SCIENCE, PHILANTHROPY, AND
POPULATION

BY
FRANK W. WHITE,
L.R.C.P. & S.E.

WITH A FOREWORD BY
MAJOR LEONARD DARWIN, Sc.D.
(President of the Eugenics Society since 1911)

LONDON :
WATTS & CO.,
5 & 6 JOHNSON'S COURT, FLEET STREET, E.C.4

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FOREWORD

THE subject dealt with in this little book is one of immense importance to the nation. No student of science or history now believes that a race retains the same characteristics century after century. We are not standing still, and the question is : Are we going uphill or down ? Many weighty considerations point to the probability of racial deterioration. If so, how is this coming disaster to be avoided ? This is the question to which Dr. White wishes to draw public attention, and if any words of mine can assist him in his endeavours they are most willingly written.

Eugenics is a recent growth, and it is not surprising that some differences of opinion exist among its advocates. I would not wish it to be otherwise. The foundations on which Dr. White and I would build, together with the main superstructure, are identical. He is, however, more hopeful than I am, and some of his remedies appear to me to be Utopian ; a fact which he seems, however, fully to recognize. But Utopias have often done much good by arousing public attention.

Politicians are bound to strive to improve the surroundings of all the citizens they represent, and they are unlikely to neglect this duty seriously because

it is the way in which votes can be won. It will not, however, be until we have in Parliament a considerable number of men who look beyond the votes at the next election to the fate of the country many generations hence, that progress will be made in racial problems. I hope that this volume will be read by many electors, and that they will take every opportunity of forcing on the attention of their representatives in Parliament the necessity of taking these vital problems into practical consideration.

LEONARD DARWIN.

*Cripps's Corner,
Forest Row.
December, 1928.*

PREFACE

HUMANITY is passing through a phase of comparative plenty. We are in the midst of the Steam Age of prosperity. How long this favourable state of affairs shall continue, however, rests with man himself. Should he combine forces at once, apply the power at his command, and take advantage of his opportunities it may be prolonged indefinitely. But if he persist in his present courses, then it may be of very brief duration. Modern civilization is faced by a double menace. By a wide-spreading racial deterioration on the one hand, and by the approach of world overcrowding on the other.

It is to emphasize these dangers, to show how they have arisen, and to strive to make clear how they may be successfully overcome by the adoption of a consistent attitude towards science, philanthropy, and population that these pages have been written. Technical phraseology and statistical detail have throughout been avoided so far as was compatible with clarity of exposition. It is earnestly hoped, therefore, that this little volume—intended to present the situation of to-day in a comprehensive form—may be of interest to the general reader, to whom I desire especially to appeal, and whose active co-operation and support in

any scheme for reform it is so vital to enlist. But should the facts and arguments here advanced seem convincing to the minds of even a small section of the more thoughtful the labours of authorship will be abundantly rewarded.

As Chapter III, "Unemployment from the Biological Standpoint," has already appeared in *The English Review* of December, 1926, I take this opportunity of expressing my thanks to the Editor for his courtesy in permitting me to reprint it in these pages. No other portion of the work has before been published.

F. W. W.

Since the above was written I wish to put upon record my deep indebtedness to Major Leonard Darwin, Sc.D., for having critically read through my MS., and for having contributed a Foreword to this book. My warm thanks are also due to Mrs. C. B. S. Hodson, F.L.S., who most kindly examined the MS.

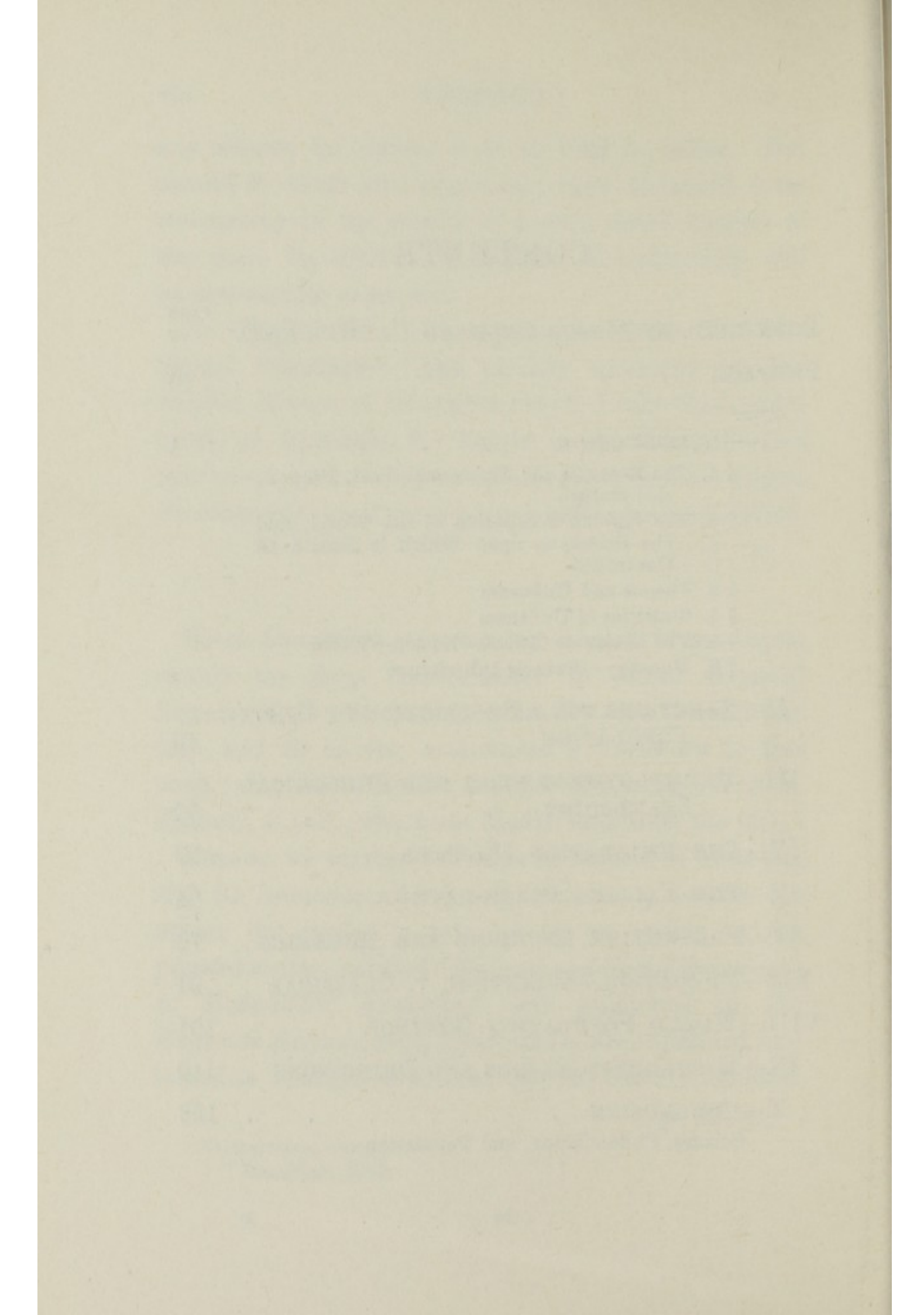
Finally, for further statistics in respect of unfitness and its immense and yearly-increasing cost to the nation the reader is referred to an article by the present writer, entitled "Natural and Social Selection: A 'Blue-Book' Analysis," first published in the *Eugenics Review*, July, 1928, and since reprinted and issued as a pamphlet by the Eugenics Society, London.

F. W. W.

Newcastle-on-Tyne,
December, 1928.

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CHAPTER I

Introduction

§ 1. *The Struggle for Existence—Past, Present, and Future*

AT the very outset of any discussion regarding population it is necessary to draw attention to the struggle for existence which is continually going on around us.

Throughout all our inquiries this vast contest for life must never be lost sight of; it must stand forth in sharp relief, constantly before the mind. The influence that it has exerted upon every living thing cannot be exaggerated—whether it be the elephant or the grasshopper, the oak or the primrose, the man or the starfish. Though often an unseen power, acting in silence and obscurely, once thoroughly apprehended, its terrific results are observable everywhere. It has been the driving force to migrations, to the peopling of the extremities of the earth, to wars and conquests, to massacres and revolutions, to uprisings and downfalls; it has been the spur to industry and the enemy of sloth; it has caused myriads that were born to perish prematurely; it has been an essential factor in the transmutation of species and in evolution. Its early and partial enunciation is associated with the name of Malthus; but its full recognition and wide significance are due to the genius of Charles Darwin. Whence it came, whither it may yet lead us, whether it prove ultimately a scourge or a blessing, are fascinating subjects into which we can enter only briefly here. But it is necessary that each one of us should acquire a clear conception of this all-pervading principle of life if we are to form any sort of balanced and accurate conclusions upon questions of population to-day. Its full comprehension is absolutely conditional of an intelligent understanding.

The plant draws nourishment from the soil, directly ; the animal (including man), indirectly, by feeding upon either plants or plant-feeding animals. But while the potentiality of all plants and animals to multiply is practically unlimited, the soil of the earth is necessarily only of limited amount. Thus an ultimate bar to increase is imposed upon all.

Now, every organism (or pair) that exists, including man, owing to the fact that its natural rate of reproduction is in geometrical ratio, is *always* tending to cover the whole earth with its kind ; and, if unhindered, could do so in an amazingly short space of time. But in this attempt it is prevented by every other form of life tending simultaneously to accomplish precisely the same feat, and by the physical conditions which surround it—climatic and other. Consequently, of vast multitudes perpetually being procreated, only a very few individuals can find standing room, and reach maturity. All the rest are destroyed in some way by the action of various agencies or checks. And the ruthless strife thus engendered for survival constitutes what is known as the Struggle for Existence.

The fact accordingly emerges that the natural rate of increase of population, of any kind whatsoever, is always restrained—save under very exceptional and temporary conditions—by a great many varied and complex checks, affecting different species in different ways, into the detailed discussion of which, however, we cannot enter here, but to which we shall return in Chapter II. But with certain creatures for a long time in the past the outstanding factor in limiting their numbers was the quantity of nourishment available. This group embraced members of the animal kingdom which did not, in a general way, serve as food for other creatures, either by reason of their physical powers (e.g., birds and beasts of prey) or owing to their mental development, as was the case with man. Although they were, of course, liable to be preyed upon to some extent by parasites (microbes and worms), and although often slow breeders, yet the amount of food available, and the battles among them-

selves for its possession, have constituted the main checks upon their increase in the past. As the growing intelligence of man, however, enabled him to take precedence over all others of these creatures, he soon entered upon a campaign against them of purposeful destruction, in which, begun ages ago, he still continues. But throughout a long period—after he had partly mastered his savage neighbours, and until the time dawned when he first contrived the more advanced mechanical aids to production and distribution—there is little doubt that his numbers were controlled chiefly by the local food supply, for which he had to strive fiercely with his fellow men. Nor is this hard to believe when we call to mind how huge a population can quickly result from the geometrical rate of increase—at which rate human population always tends to grow. For, under favourable circumstances of food, space, and climate, it doubles itself in every twenty-five years. And this statement does not rest upon theory alone, but has been borne out by observed fact in the United States. So we must remember that from 100 persons 25,600 can easily spring in 200 years. And no limited area can keep pace with this increment for long.

From these considerations, then, we cannot but conclude that, in the past, human population always tended to outstrip the food available, and that the numbers were held in check mainly by a shortage of supplies, either directly by periodic famines, or indirectly by hand-to-hand strife, warfare, infanticide, or high death-rate from slight causes—the result of partial starvation. Man's natural tendencies in this respect, therefore, unintelligently followed, led the bulk of his descendants, in the end, to acute competition, severe suffering, bloodshed, and premature death. Only the fittest survived. All others were mercilessly eliminated.

Let us now turn to the study of the question in our own times. We find that throughout the whole length and breadth of "wild" nature the struggle for existence still continues upon exactly the same lines as of yore.

But when we come to view modern civilized man we

observe some very strange things, or, rather, things which, at first sight, appear very strange. We find that the continued exercise of human intelligence has much modified (and complicated) the struggle for existence in respect of man himself; with what results (hopeful or menacing) we shall endeavour to make plain in future pages. But with one thing of a seemingly surprising nature we must deal briefly in this place. It concerns the influence exerted by food supply upon the more advanced human populations.

In the past, as we have seen, human population was mainly held in check, directly or indirectly, by the food supply available, which had to be fought for; whereas to-day human food supply in most of the highly civilized countries, although of course never unlimited in amount, is yet provided in so liberal and sufficient a quantity that population is not at present, in any conspicuous way, being held in check by a lack of it. In fact, such restriction as does occur now appears largely due to a complexity of other economic causes, dependent upon the high standard of life and living which is aimed at, and upon the improvident preying on the provident. Thus the old rule would appear to be either inapplicable to modern society or else in abeyance for the time being. And on this account doubts are even being expressed, from some quarters, as to whether food supply has really any very important influence upon human population at all! Indeed the struggle for existence in modern societies is not nearly so acute as it was in more ancient times, because food is now more easily obtained, and population is not rigorously held back owing to a perpetual or periodic shortage. Furthermore, it must be remembered that the total number of individuals to be fed is now vastly greater than it ever was before.

The questions naturally arise: How are these remarkable occurrences to be accounted for? Have the old laws of nature ceased to operate? Were they unsound? Or have new ones taken their place? But when we examine the matter more closely the explanation of this so happy state of bounty quickly becomes evident. It is

seen that it is likely to be of very brief duration ; and that, so far as one can predict, if existing methods and practices are not altered at an early date, the old law will only too soon again come into operation, with perhaps even greater severity than ever ; and human population will once more be mercilessly thrust back upon itself by a scarcity of nourishment. For it must never be forgotten that, whatever else may happen, population can never *exceed* the maximum production of which the earth is capable.

The truth is that modern man has caused the means of subsistence to increase more quickly than human population has been able to multiply in the same time. By rapid advance in science and scientific method, by the discovery and speedy elaboration of multitudinous and varied mechanical appliances, by the introduction of the steam-engine, by the vast improvement of shipping and railway systems—by the comparatively *sudden* acquisition of all of these, we say, and the power they have placed in his hands—man has been enabled of recent times to enormously increase and supplement the quantity of food-stuffs available at any spot on the map desired, and thus avoid the acute shortages that used to occur. By his scientific methods, his inventions, and his rapid means of transport, he has been able not only to increase suddenly the produce of the earth and to cultivate sparsely-peopled lands lying often at great distances from his centres of operations, but to transfer immense quantities of the essentials of life swiftly and safely from place to place. (And last, but by no means of least importance, it must ever be borne in mind that the whole continent of America was discovered only a little over four hundred years ago. A country nearly equal in area to one-third of the earth's dry surface ; almost as large as Asia, and nearly four times the size of Europe ; abounding in every natural wealth required by modern civilization ; and, when first discovered, having a remarkably small population of its own, composed entirely of savages. Here, indeed, was an acquisition ! a windfall !) Moreover, the above system, once set going efficiently,

tends for a time (though with rising expenditure) to produce more and more of human necessities up to a certain point—when the world's maximum production is reached; but thenceforth no further increase is possible. In this explanation, then, lies the key to the mystery of the "no shortage of food" in highly civilized lands, despite their vast and still increasing populations, and the relatively small land bases of some of them.

Our own country affords a striking illustration of the extent to which population can increase, if sufficient food supplies be conveyed to its inhabitants quickly, regularly, and cheaply by efficient transport from distant places. For it is common knowledge how vastly our consumption exceeds our internal production. The density of population in England is now, roughly, 701 persons to the square mile of surface, and is still steadily increasing year by year; yet here there is no shortage of food; and, all seeming well in this respect, we are continually being urged to multiply more rapidly!—even though our present rate of increase (6 per 1,000 per year) is nearly the same as that of the total world rate of increase, which is slightly under 7 per 1,000 annually. (And no doubt it is largely on account of our present easy circumstances as regards food that we are to-day transgressing a natural law by encouraging even our unfit to multiply! Under a harsher régime such palterings would never occur.) But let us suppose this density of population were to extend to the whole world—as, indeed, it is struggling to do—what would be the result? Could the inhabitants be supported by the earth's maximum produce? If all the earth (excluding, of course, the 5,000,000 square miles at the Poles) were to have an *average* density of human population equal to that actually obtaining in England to-day (and which is still increasing, showing that a density of 701 is not incompatible with steady increase), the present population of the former would have to be increased by seventeen and a-half times. Instead of its being about 2,000,000,000, it would have to become 35,000,000,000. And can anyone be found bold enough to state that the earth could support (in accordance with

civilized standards) even one quarter of this vast number—and even so, still increasing!—to say nothing of the complicated mechanical systems necessary for the production and distribution of the food, and all the fuel, minerals, etc., that this would imply, and upon which everything would really be dependent?

Now, although at present, for the reasons given, we appear to have an abundance of food, and our population is not noticeably controlled by a scarcity, nor incommoded seriously by a struggle for existence, yet how long can this continue if we go on as we are doing? And this is the vital point. The population of the earth is annually increasing by some 12,500,000. Consequently, so long as this be permitted, we are year by year approaching nearer and nearer to the extreme limit of the earth's possible food production. For surely no one imagines that this latter is capable of indefinite increase! Agricultural development has its limits, obviously, as the earth's surface, coal and minerals, and our methods of transport also have theirs. So it is only a question of time, if human population be allowed steadily to increase, as to how long it will be before it is once again controlled by the food supply available. Then, indeed, terrible would be the chaos, the suffering, the strife, and struggle for existence! Each man once more for himself, and the survival of the fittest only!

But long before such a stage as this were reached, and since the scarcity of food would not have been experienced equally all over the earth, the struggle would have become more and more intense at certain points, and wars, the like of which the world had never previously known, would have become increasingly more frequent. So here lies the warning. Let us take advantage of these present good times of bounty, and take stock, and calculate, and control population in reason while there is yet time, before we tread too closely upon the heels of food supply. For the law that human population *tends* to be limited by food supply in the long run is merely in abeyance temporarily, so to speak; and if population exceed certain limits (as its tendency is, if not restrained by human

intelligence) we may have to pay a terrific price in the not very remote future for our recklessness. Man has of late been struggling and striving after many things, but of all struggles there is not one to compare in utter frightfulness with that due to a scarcity of nourishment.

Let us not be lulled, then, into a false sense of security by a time of plenty, which, if we do not exercise our intelligence in a right direction, may be of very short duration. Indeed, even as it is, we may have already seriously prejudiced the future interests of our descendants. There is clearly no time to lose: 12,500,000 are being added every year to our numbers, which are said to have doubled themselves during the last one hundred years; and no more Americas now remain to be discovered.

Reviewing man's past and present, we observe that his record has been, in a sense, the gradual overcoming, one after another, of the original checks upon the increase of his numbers. And as a result of this, and by his tendency to combine forces intelligently with his fellows, he has been enabled to attain to his existing state of dominance over the rest of the animate world. He has subordinated all living things, and battens upon them almost to any extent that he desires. He has become, in fact, the first and chiefest of birds and beasts of prey. But, great though his powers undoubtedly be, he can never increase the earth's yield beyond a certain limited amount. The time has arrived, in consequence, when he must impose new checks of his own designing upon his further increase. They are of two sorts. Firstly, in respect of quality; secondly, in respect of quantity.

Let us glance very quickly over man's history. During the earliest stage, when newly separated from his savage cousins of the animal kingdom, he was subjected to all the rigours of natural selection—to every type of struggle for existence. Not vastly distinguished as yet for intelligence, and of no great physical development, he was ruthlessly preyed upon by many of the larger carnivora. Indeed, his surviving at all, at this stage, might very reasonably

have been doubted. His struggle must have been a very severe one ; his prowess lay mainly in a superior cunning. Later, by utilizing caves for shelter and skins for clothing, he removed certain checks upon his increase. Later still, with the introduction of rude weapons, primitive language, fire, and some degree of combination, a certain mastery over the fierce animals that surrounded him was obtained. This markedly favoured man's multiplication, the check upon his increase by serving as food to other creatures being now considerably modified. Next, by organizing a limited transport, we find him forming larger and larger collections. Coming now with a leap to modern times, we find him, by his inventions and explorations, extending his operations upon a world-wide scale, and increasing available food supply faster than he has multiplied. He has thus temporarily much mitigated the action of this great check, which has always in the past been an important factor in controlling his numbers. Furthermore, we find him now vigorously waging warfare upon other ancient enemies—parasites and microbes—and so again diminishing the natural checks.

Such briefly has been man's past. His struggle in the future depends greatly upon himself. If he unite amicably with his fellow man (thereby reducing yet another check), and control himself in quality and quantity, happiness, plenty, unity, and peace stretch before him, so long as the earth continues to spin swiftly through space, and the sun supplies a sufficiency of warmth. But if he remain disunited, and allow his population to continue to degenerate in quality and increase without intelligent restraint in numbers, the horrors of disease, famine, strife, and carnage appear inevitable, in the long run.

We must now sum up the results of our inquiries in respect of the struggle for existence as affecting man. In the past it was extremely intense. In modern times the struggle for essentials has been considerably meliorated, owing not so much to human good management as to good fortune in the recent discovery of sparsely-peopled America, coupled with the sudden exploitation of steam

power. Unfitness, unhappily, has been preserved and multiplied. In the future it is problematical, depending upon the proper or improper use of human intelligence. But the tendency at present seems to point to the struggle being renewed with increased severity—unless man immediately bestirs himself.

§ 2. *The Human Population of the World, and the Principles upon which it Should be Controlled*

It cannot be said, then, that man, in spite of his intelligence, has been much outdistanced by his brethren of the animal and vegetable kingdoms in respect of the exercise of his reproductive functions. The phrase, "Increase and multiply" (without any reservations or qualifications, saving only those imposed by necessity and possibility), seems to have been his slogan. Generally speaking, he has followed it blindly, improvidently, and with a total lack of intelligent foresight—a complete disregard for inevitable consequences. Under a cloak of virtue and so-called religious sanction, or even under no cloak at all, he has indulged his passions and appetites, as it would seem to an impartial observer, rather with a view to a shameless overcrowding of the earth than to its beneficial and reasonable peopling. Humanity, in the bulk, has hence been produced in heaped-up masses, crowded together in filth and misery, an easy prey to the ravages and scourgings of famine, pestilence, war, and despotism.

Such, in brief, has been man's past history; inevitably, from this vast shambles, only the fittest emerged. To-day, though feeble attempts at a reasonable restriction of fertility and a unification of aims are happily dawning, a tremendous effort at reconstruction is urgently demanded, if we are ever to attain to any kind of general peace, or settled happiness, upon this planet.

Tragic or otherwise though it may be, it would appear that for progress to continue here upon earth the spur of competition is an essential and unavoidable condition. Accordingly, *some degree* of it must be accepted as inevit-

able. And, indeed, it is difficult to conceive of a state of society, that aims at advance, without the aid of this compelling influence. The ill effects of a lack of it are only too obvious at the two extremes of society as it exists to-day—namely, the two kinds of unemployed: the idle rich, drawing income from investments which cost them no labour or anxiety, and the unoccupied pauper on the dole. Each tends strongly to gravitate on the downward path towards total incompetence. One must have some standard of comparison, and we can only gauge our own efficiency, in any particular direction, by comparing with those around us. Few indeed are those who exert their energies in any high degree unless to compete for the necessities of life or some other coveted prize. For what really is ambition but the hope and desire for success in competition with others—to best one's fellows in some test, physical or mental? It is the same with nations. But, in each case, it must be possible to arrange for a degree of competition that stimulates an honourable and beneficial rivalry, but at the same time falls short of leading to actual physical strife, blows, and warfare. Such a degree is the ideal to be attained. In other words, there must exist in this, as in everything else, the happy mean. And it is to recognize, to define, to proclaim the precise degree of population of the earth which will be compatible with the maintenance of this happy mean of competition that the philosopher, the scientist, the social reformer, of the present and the future, must exert his energies to their fullest powers. The appeal is a great one. Upon the elucidation of this problem, and the institution of a general and efficient system for preserving the balance, depend the mighty issues of world-peace and the continuance of modern civilization. Surely such exigencies should stimulate the best endeavours and co-operation of us all. So long as we permit a totally unchecked multiplication of the human species, exactly so long will the evils of war and strife continue. And since there is no escape whatever from the irrefragable truth of this proposition, the earlier and more clearly it receives world-wide recognition the

nearer becomes the expectation of future peace and happiness. The teachings of reason and science cannot with safety be longer ignored; and, however distasteful they may appear, fundamental facts must be boldly faced.

The earth, though limited in extent, and seemingly grossly over-populated in places, is, as yet, by no means completely exploited by man—some of its resources still remain untapped; some are still in reserve. How long this state of affairs will continue, how long it will be before the whole available surface is overrun and stacked with struggling humanity right up to the extreme limits of possibility and its food supply, are questions to be decided either by the greeds and jealousies of peoples, the machinations of grasping politicians, despots, and megalomaniacs, or by the reasoned co-operation of all concerned. A wise outlook, we would imagine, and one which would show a regard for future generations, would be not to push too rapidly but to leave a little in reserve for later need; not to devour all one's cake, in fact, at a single meal! But, unhappily, as international relationships are at present constituted, there exists a perpetual dread that, if one does not stretch out the hand quickly, the prize will be snatched away by one's neighbour. Consequently, for the immediate present, and until better relationships are established, each must endeavour to stabilize its territory so far as may seem necessary for its defence. To any who look ahead, however, this question at once stands out in threatening relief: From whence is the food supply to come to feed the now over-populated areas when all the world is fully populated? Even to-day, owing to steam power, extraordinary nations like our own exist which are certainly not self-supporting, something like eighty per cent of essentials having to be brought to us from over seas. Moreover, our home population is still increasing, being some 2,000,000 more than it was before the Great War, in spite of the 800,000 casualties. It may well be asked, then: If we populate our Dominions to such an extent that they require all the food-stuffs and other necessities produced there for

their *own* consumption, what is to become of the home population? Obviously there is a limit to migration; and this limit requires immediate determination, so that our future conduct may be safely regulated thereby. The easily imagined horrors of a fully-stocked world in time of famine or warfare might surely cause the nations to pause in their headlong pursuit of filling up all the remaining corners of the earth. International understandings, agreements, and combinations are urgently required upon these matters.

According to Sir Leo Money, in his recent book, *The Peril of the White* (1925), human population throughout the world is still steadily increasing at an average rate per year of about 12,500,000. The total human population is now, in round figures, estimated at 2,000,000,000. So, if we take the earth's dry surface as being, for practical purposes, about 50,000,000 square miles in area, we find that, even to-day, each square mile on the average is shared by some forty individuals. There are about two coloured to each white inhabitant. The actual density of population varies enormously, as might be expected, in various regions; and this is due to differing climatic conditions and natural resources of the earth at different points. Thus some countries are favourable only to the coloured races, some to the whites, some to both; while others again, owing to a lack of rainfall and being more or less sterile, are favourable to neither. At present, for its full development, white civilization requires an immense and cheap supply of combustible material in a condensed form, in addition to a suitable climate and a free access to all the more common minerals; and hence the massing of population in certain localities is readily accounted for. Without doubt this has been an essential factor in the unparalleled development of the population and prosperity of the United States of America. Modern industrialism can only flourish, to any considerable extent, in the vicinity of coal or oil, since the energy liberated by the fusion of these supplies the driving force, directly or indirectly, to nearly all the multitudinous and multiform mechanisms of civilization. Without this form of energy

no great white civilization, as we know it, exists. It cannot be expected, therefore, that countries where coal is scanty, or of poor quality, or to which it can be shipped only at high cost in large quantities, will ever develop *naturally* the high and concentrated white populations to be found in countries where coal and oil occur locally and can be raised at a small cost, even where climate and other things are equally favourable to increase in the two cases.

To illustrate the varying densities of population in different parts of the world, let us cite the cases of a few countries taken at random. The following figures cannot, of course, be precisely accurate, but are approximately correct. The density of population in England is about 701 to the square mile. For England and Wales it is 649; for the United Kingdom, 389; for Belgium, 615; France, 184; Germany, 334; Italy, 339; United States of America, 36; Switzerland, 243; Soviet Russia, about 56; Spain, 115; Norway, 23; India, 177; Japan, 400; Rhodesia, 4; Egypt, 40; Senegal, 16; Mauritania, 1; Canada, $2\frac{1}{2}$; Brazil, 10; Argentina, 10; Australia, 2; New Zealand, 12; Fiji, 20; Persia, 17; China proper, 279; Labrador, about 1 in 30 square miles.

From these figures it *might* appear easy at first sight to predict from which countries an overflow of population could be expected to take place. But the question is much complicated by natural and artificial barriers, and the at present more thinly-peopled areas are by no means in every case suitable (either climatically or in other respects) for the reception of immigrants in large numbers. We must not lose sight of the fact that for massed and economic production of the necessities (or what are regarded as the necessities) of modern civilization large agricultural tracts must continue to remain fairly sparsely populated, so that their inhabitants may produce food-stuffs in such excess of their own needs that they can pass on a huge surplus to the concentrated crowds of humanity otherwise employed, receiving in return an equivalent of manufactured goods. Consequently, if we push migration into the food-producing areas beyond a

certain limit, we necessarily at once begin to starve and incapacitate those entirely occupied in their labours of industrialism. Obviously, then, we must take every precaution to ensure that the agricultural spaces of the earth are populated only to a certain degree. And this ideal is reached when a maximum quantity of food-stuffs is being produced by a minimum number of producers.

It is for the nations to determine and measure this safe limit of population. They should combine for this purpose, always remembering that the surface of the earth and its possibilities are distinctly limited, and must ever remain so, however much one might wish it otherwise. There are now no new continents to discover, and surely the time has at last arrived for all illusions and superstitions on this head to be finally dissipated. We must concern ourselves with facts as they exist rather than with fantasies, and ask ourselves plainly, How many can this earth comfortably support? and adapt our numbers accordingly and in reason. Such would certainly appear a wiser course than to waste our time and stir up strife by dreams of vast new populations, with their smoke stacks and hideousness, making repulsive the fair face of Nature's granaries.

So long as the human creature requires food, so long must there be left a sufficient space to grow it.

§ 3. *Fitness and Unfitness*

Since these terms are frequently made use of with much looseness of expression, and as there exists a great deal of popular confusion regarding their exact signification, a few words upon them may not be out of place. It is often assumed, for example, that fitness has reference only to the more apparent and cruder kinds of physical health and greater degrees of muscular strength—mental states being set aside as things entirely different. This sort of narrow regard is, of course, grossly misleading, and for practical purposes we must consider all the faculties of man, physical and mental, as being one correlated

whole, acting in harmony together and dependent one upon another.

In this view we are supported by the facts of Palæontology. Fossil remains of great antiquity have been brought to light in recent times, clearly demonstrating the existence upon earth of gigantic creatures (especially of reptile type) which have long since become extinct. Many of these have been reconstructed, and must have belonged to beings of immense size and physical strength. But the fact that they died out long ago, while much smaller and apparently much less robust organisms have remained, clearly proves that mere bulk and brute force of themselves do not constitute the sole prerequisites to survival. Other factors are needed in addition. Nature abounds with instances of organisms, both animal and vegetable, which, though seemingly of the most tender and fragile structure, are yet found to have an extremely tenacious hold upon life, and continue to reproduce their kinds generation after generation.

Fitness and unfitness are due, therefore, to a subtle complexity of causes. The question is really one of economic balance, of efficient reaction to action, of adaptation and adaptability to environment.

By the environment of an organism we understand all those agencies in its surroundings, good or bad, beneficial or harmful, with which it comes in contact during its life-history. (Its environment at any particular moment, of course, consists of the agencies to which it is exposed at that particular moment.)

Without entering too profoundly into the matter, and treading warily over a field already abundantly bestrewn with the broken weapons of controversialists, past and present, we may safely affirm that we recognize what is commonly termed Life in an organism by noting the character of its reactions to the actions upon it of the various factors in its environment. A plant in good moist soil grows luxuriantly and produces seeds; in poor dry soil it withers; grown in the dark its leaves are almost colourless. An earthworm protruding from the

ground, if lightly touched, retracts into its burrow. If a blow be aimed at a man's face, he will wink. Such are illustrations of action and reaction familiar to every one, and they might be multiplied almost without limit. All living things whatsoever are constantly being acted upon by and reacting to their environment.

A creature is said to be "adapted" when its structure is such that it can react advantageously in response to the actions upon it of its usual surroundings; it is "adaptable" when its structure is of so plastic or elastic a nature that it admits of degrees of modification corresponding to alterations in its environment. A man may be said to be fit or healthy when the sum-total of his component elements, physical and mental, is well adapted to his environment and adaptable to certain changes in it, within reasonable limits. The fittest is he who is relatively the most perfectly adapted or most adaptable—i.e., can adapt himself most readily to the wider degrees of change in his environment. The normally fit or healthy man is he who reacts favourably in what is considered an average degree to his surroundings or changes in them. Fitness or health, therefore, is the capability of efficient reaction to the factors of environment. The varying degrees of unfitness correspond to varying degrees of inability to react efficiently. If an organism is not at all adapted, or incapable of adaptation, to its surroundings it cannot live. An organism may be fit, healthy, and adapted in one group of surroundings, but the absolute reverse in another; as examples of which may be given the extreme cases of a fish removed from water to air, or a man immersed in water. Unfitness, ill-health, and disease are due to a failure of the whole organism, or a part of it, to react efficiently and normally to environment or slight changes in it. Such states may be temporary (as in acute febrile diseases, etc.) or permanent. A man whose adaptability is only efficient over a very limited and subnormal range of change in his environment must be regarded as potentially unfit; he is always liable to break down under a stress which could be borne by the normally fit individual.

Now no living individual creature that is known to us is *perfectly* adapted to its surroundings. Nothing is perfectly fit or healthy. If it were so, if the balance were exact, if a creature were absolutely adapted and adaptable to its surroundings, we might reasonably conclude that it would never die, but would continue its individual existence for ever, which is happily, or unhappily, not the case. Individual life is thus a continual struggle with environment, with the harmful agencies present in it. Our reactions are never *quite* efficient—never precisely proportionate—even at our seeming best; and in the long run the cumulative ill-effects of environment triumph: our reactions become feebler and feebler, less and less efficient, and death closes the scene.

Health and fitness, then, are really relative terms, and in this sense we employ them. No such things as perfect health or perfect fitness exist upon this earth. But it is obvious from the above considerations that an individual born sound, of good stock, endowed by his ancestry with a first-class natural inheritance, will tend to lead a normally fit, happy, and useful life, reacting throughout advantageously to a reasonably wide range of environmental conditions, and culminating in a healthy old age; whereas one born of bad stock, with an unsound natural inheritance, with feeble powers for reacting, a misery to himself and a burden upon the community, will almost certainly fall an easy prey to some adverse constituent of his environment.

Of such a nature are fitness and unfitness.

§ 4. *Statistics of Unfitness*

Questions that are continually being asked are: Who are all these unfit of whom you speak so glibly? Where are they to be found? What is their number?

Those who will take the trouble to seek in the right quarters for information regarding the existing unfitness in this country and elsewhere will quickly be rewarded for their labour. Statistics have been gathered together

by many workers in this field. Let us now glance at some of them.

A. F. Tredgold, M.D., F.R.S.E., in a paper ("The Place of Inheritance in Preventive Medicine") read before Congress of the Royal Sanitary Institute, London, July, 1926, gives some ominous facts. His first source of information, he tells us, comes from the Statutory Medical Inspection of School Children: "In a memorandum published in 1919, Sir George Newman states that the total number of children of school age in England and Wales is estimated at 6,807,260. The majority of these are in most respects healthy. 'Nevertheless a moderate computation yields not less than a million children of school age as being so physically or mentally defective or diseased as to be unable to derive reasonable benefit from the ordinary form of education which the State provides.'"

His next statistics are taken from the National Health Insurance Records: "It is stated that the estimated number of insured persons in England and Wales entitled to medical benefit for 1914 was approximately 10,300,000. Of this number approximately 5,800,000, or 56 per cent of the total, applied for treatment." Later that "figures published by the Ministry of Health for the year 1923 show that during that year in England and Wales there was a total loss of $20\frac{1}{2}$ million weeks' work, corresponding to a period of 394,230 years, or to the work of 394,230 persons for the whole year" due to sickness.

Dealing with insanity and mental defect, Dr. Tredgold says: "According to the current annual report of the Board of Control the number of notified insane persons under care in England and Wales on January 1, 1925, was 131,551; while the number of mental defectives under care on the same date was 19,376. These numbers have been rising each year for some time past..... There is not the slightest doubt, however, that the figures greatly understate the real incidence of these conditions." Later: "I am of the opinion that at the present time the insane and mentally defectives together comprise about one per cent of the population of the country."

This would give us nearly half a million insane and mental defectives in England and Wales alone, many of them supported at an immense cost, largely unproductive, devouring food-stuffs and occupying space, buildings, etc., that would maintain at least an equal number of valuable citizens. Furthermore, there is no law at present to prevent these unfortunates, when mingling with society at large, from contracting marriages, and so disseminating the seeds of mental mischief yet more and more widely. Such a policy, as it seems to us, can scarcely be described as economic—to put it mildly! But to quote Dr. Tredgold again: “It is relevant to point out that, in addition to these, there are no less than 600,000 backward children in the country, and, in regard to these, Sir George Newman states: ‘This group is unable to respond with proper benefit to our educational system and adds 50,000 recruits to our industrial army every year who are not only unprepared, by mental retardation, to meet effectually the demands of full life, but who furnish society with the bulk of its inefficient adults—criminals, paupers, mendicants, and unemployables.’”

The final statistics brought forward by Dr. Tredgold in this paper are drawn from the Report of the Ministry of National Service upon the Physical Examination of Men of Military Age, for a period of one year, from November 1, 1917, to October 31, 1918. “The total number of men examined during this period was 2,425,184, and the Report states that: ‘It seems probable that the men examined during the year under review may be regarded in the aggregate as fairly representing the manhood of military age of the country in the early part of the twentieth century from the standpoint of health and physique.’ It is also considered that the figures underestimate, rather than over-estimate, the amount and degree of physical disability and disease. The men examined were placed in four grades.” The actual results were as follows: 871,769 were placed in Grade 1, 546,276 in Grade 2, 756,859 in Grade 3, and 250,280 in Grade 4. Our authority goes on to say:—

“These results may be summarized by saying that of

every nine men of military age in Great Britain there were:—

- “ 3 in Grade 1, being perfectly fit and healthy.
- “ 2 in Grade 2, being upon a definitely inferior plane of health and strength, from some disability or some failure in development.
- “ 3 in Grade 3, being incapable of undergoing more than a very moderate degree of physical exertion, and who, in view of their age, could almost be described with justice as physical wrecks.
- “ 1 in Grade 4, being a chronic invalid with a precarious hold upon life.”

Further on Dr. Tredgold, reviewing the statistics he had brought together, said of them that “they are certainly profoundly disquieting.” We submit that all honest and reasonable persons, after studying the above facts, will be in complete agreement with him. Thus we gather from the remarks of Sir George Newman (Chief Medical Officer of Ministry of Health), in respect of the school children of England and Wales who were medically examined in 1919, that at least one out of every seven had to be classified as unfit from one cause or another. This is a heavy percentage, and exhibits with strong emphasis the general condition of the rising generation—the parents of the future. And be it remembered that, under existing conditions, all those of this million defectives who reach maturity are just as qualified to marry freely, and multiply indefinitely their kind, as are their more healthy and valuable neighbours. Surely here is ample scope for economic discrimination, for the exercise of an enlightened public opinion, and for future legislation.

The National Health Insurance statistics, already quoted, show the immense loss of work owing to sickness among our workers occurring in England and Wales in the years 1914 and 1923. But we have examined the National Health Insurance returns for the United Kingdom for the year 1925. In that year there were nearly 11,000,000 men and about 5,000,000 women under the scheme (including Northern Ireland). During this year

no less a sum than £15,325,000 was paid out in sickness and disablement benefits. On analysis, this vast sum actually represents the loss of at least 17,567,996 weeks' work for men, in addition to 10,783,328 weeks' work for women; or, in other words, the loss is that of 337,846 men and 207,371 women all working for one year. (We have taken no account of the three-day periods that must elapse before sickness benefit becomes payable. Were additions for these made, the actual loss would, of course, be still greater.) But, in a sense, a sick person constitutes a double loss. Not only does he receive money from the common fund during his incapacity, but he is also unproductive during that period. It is thus evident what a grave amount of financial loss to the nation is entailed owing to ill-health and unfitness, as exhibited by a study of the National Health Insurance returns.

Sir Alfred Watson, K.C.B., in a paper ("National Health Insurance: A Statistical Review") read before the Royal Statistical Society, London, March, 1927, said: "The system as a whole must cover from 30,000 to 40,000 people, who, though not permanently sick, are frequently on the funds for long periods after reaching the stage of disablement benefit." This remark clearly points to the existence of inferior types among our workers. And in this connection we must bear in mind that, in times of acute competition for work, as at present, the vast bulk of persons receiving unemployment benefit must also be regarded as to a great extent *unemployable*—in fact, as more or less unfit. In the year 1926 the huge sum of £50,201,758 was paid out in doles to unemployed persons. This figure is taken directly from the yearly report of our Ministry of Labour for that year. In 1925 the amount was £45,814,762.

Regarding mental disease and failure of mental development, we find that an increase in these conditions is being *officially* recognized in this country. A similar state of affairs is to be noted as occurring in the United States of America. To quote from a preliminary bulletin, published by the Bureau of the Census (Department of Commerce) in Washington, entitled "Patients in Hospital for Mental

Disease, 1923": "The number of patients per 100,000 of the total population was thus three times as large in 1923 as in 1880." Further on the Report, in endeavouring to account for this great apparent increase of mental disease, states that: "It is in part to be accounted for by the more general use of hospital care in recent years." One cannot doubt, therefore, that mental trouble is definitely on the increase. And it is to be feared that a wide dissemination of the less obvious forms of it is at present taking place—giving rise to the far-reaching menace of a spreading degeneracy.

Recent statistics from Germany are similarly significant. Professor Lenz has estimated the total "defectives" at so high a figure as twenty-five per cent of the total population. Of these he gives rather more than one half as suffering from some form of mental defect, and the rest as being accounted for by physical defects.

Sir Leo Money, in his book already referred to, *The Peril of the White* (1925), lamenting the multiplication of the unfit in this country, after drawing attention to the facts given in the Report on the Examination of Men of Military Age from November, 1917, to October, 1918 (from which we have previously quoted), goes on to say (p. 181): "This Report gives photographs of some of the actual human material condemned; they are sickening to look upon." On the same page he continues: "The War Office reports on post-War recruiting afford further evidence. They show that of the recruits who offered themselves of recent years 55 to 60 per cent had to be rejected as unfit."

An American investigation (in 1925) into our army recruiting showed 80 per cent rejections. For our police force the Report of the Commissioner (1923) gave 95 per cent rejections. Recent naval rejections are 90 per cent. And it is to be noted that the height regulation for our Guards regiments has been gradually lowered during the past forty years.

The view is now very generally held by competent authorities (and with it we thoroughly agree) that a leaning towards the commission of crime is for the most

part dependent upon a serious defect of the mind, usually inherited. Criminality is, in fact, merely an outward manifestation of an inherited mental disability or unfitness, which shows itself in a lack or feebleness of moral control, a want of mental balance, and a subnormal (or rather anormal) outlook upon relative values. The probable correctness of this view is much enhanced by observing that the ancestors and blood-relations of criminals are frequently of neuropathic type—epileptics, lunatics, prostitutes, irresponsible profligates, and the like; and also by remembering the notorious fact of how little is the deterrent effect of even oft-repeated punishment upon the “habitual” criminal. This being so, our statistics of unfitness would not be complete without a brief reference to the catalogue of crime in this country. From the Judicial Statistics, England and Wales, Criminal Statistics, we have obtained the following facts. In 1922 there were 47,606 convicted persons received into prison, of whom 82 per cent were born in England. On December 31, 1922, there were 1,472 convicts in prison (mostly for long terms); on December 31, 1924, there were 1,529. During the year 1922 there were 141 criminal lunatics received into asylums, and the number of criminal lunatics confined in asylums on December 31, 1922, was 892. Of young people in places of detention there were several thousands.

The above statistics, drawn from unimpeachable sources, must surely suffice to convince even the most confirmed sceptic or deluded optimist among us of the gravity and extent of unfitness in this nation. No one, as it seems to us, can review these baleful facts in anything like an impartial spirit and fail to appreciate their serious significance. Not only this country, but all white civilization, is to-day threatened by an onrushing wave of degeneracy. Scientific method, determinedly and consistently applied, is our sole salvation.

But dry facts quoted from books and reports, however trustworthy they be, rarely carry to the mind the full conviction that is to be gained only from a practical

demonstration. Accordingly we would strongly recommend the following simple experiment to any one desirous of testing the general truth of the statements we have made regarding the prevalence of unfitness. Let our observer take up his position on a fine Sunday evening in summer at a carefully selected spot bordering upon any one of our large towns. His situation should be one that commands a good view of a main road or track leading from the town to some common, park, or other favourite rendezvous resorted to on such occasions by the youth of both sexes. (We recommend particularly a Sunday evening, because at all other times—wet or fine, summer or winter—many interesting products of our present age are withdrawn from healthful exercise in the open air by the equivocal though compelling counter-attractions of the jazz-hall and picture-palace.) But before establishing himself at such a spot, and at such a season, our observer has clearly called up before his mind the image of a standard young Englishman, say, of twenty years of age. We can all readily picture to ourselves the *tout ensemble* which is to be expected of such a person—the scion of a race that has led, and still claims to lead, the world. All this being done, our observer will then note carefully the stature and bearing of each young man who actually passes his point of vantage, and make comparison with his ideal. Let him coldly estimate the number in each hundred who approximate in general appearance to his standard. We shall be much surprised if the results of his investigations do not quickly remove any illusions he may previously have entertained. He will probably be amazed and shocked at the preponderance of undersized, narrow, drooping, and generally poor physiques that pass him by; and he will wonder how-ever these facts escaped his attention before. The truth is that we are accustomed to these things and our perception is thereby blunted; but immediately notice is focussed upon them they at once become painfully manifest.

Though hosts of further statistics could easily be produced in respect of unfitness in this and other countries,

we are of opinion that those already set forth should be sufficient for a practical understanding of the subject.¹

§ 5. *The Desirable Citizen—Nation—World*

However difficult the actual attainment of an object may be, it is manifestly an essential prerequisite that the object be defined as precisely as is possible; then that the obstructive agencies in the way of its achievement be marshalled in review; and, further, that the steps necessary to their final dispersal be closely examined. When this has been done we shall have progressed so far upon an arduous path; and we shall be already considerably ahead of the man who plunges blindly into a cause the exact nature of which, and the difficulties attending its accomplishment, he only vaguely apprehends. It is of paramount importance, therefore, in our present subject that we should start out with a clear conception of what we really want, the obstacles that are likely to beset us by the way, and the means at our disposal by which these latter may be overcome.

We want an efficient individual, an efficient nation, and, finally, an efficient, happy, and co-ordinated world at peace. The thorns that lie in our path are, for the most part, primitive ones—the inheritance from our savage forebears: unbridled passion, ignorance, superstition, traditional prejudice, cramped and misdirected philanthropic, economic, religious, social, political, and moral outlook, many of which evil weeds, having been nurtured and fostered in the cloudy atmosphere of narrow early-teaching and unenlightened education, have through many generations retained a firm roothold up to our present time. It is the duty of science and a much broadened religious outlook to throw light upon these murky recesses, and, one by one, to uproot the noisome fungi that luxuriate in their shade. Indeed, had the

¹ For further facts relating to unfitness the reader is referred to an article by the present writer, "Natural and Social Selection," published in *The Eugenics Review*, July, 1928, and now issued as a pamphlet by the Eugenics Society.

religious zealots of the past concentrated more thought and attention upon the good state of their descendants in *this* world, and somewhat less upon their own and their neighbours' states in other worlds, our difficulties of population might not have been so many or so pressing as they are to-day. And had it not been for nature's vigorous methods of elimination, there is no saying to what degree of overcrowding we might have attained by now. Be this as it may, however, it is very clear that any religious outlook of the future will fail completely in being satisfactory which does not assign a prominent place in its moral code to our many duties to those whom we destine to follow us here on earth—to our yet unborn posterity.

Glancing back over Section 3 we find that our efficient or desirable citizen has already to a large extent been described. He should be as nearly adapted to his environment as the nature of things permits. He should be economically adapted, and of so plastic or resilient a constitution, that he is capable of yet further adaptation to further needs. While reacting readily to the favourable factors in his surroundings so as to live fully, his reactions to them should be associated with a maximum degree of satisfaction to himself—the performance of all normal functions being a continual source of pleasure—giving rise to a healthy joy of living, in fact. He should, further, offer so vigorous a resistance to the adverse elements in his environment that he can throw off their ill-effects, within reasonable limits, and so prolong his life to a fit, ripe, and normal old age. He should be thus at once capable of appreciating to the full the good things of this life, and of presenting a firm front to the bad. Economic by nature also he should be; that is to say, he should be capable of producing a maximum of energy from a minimum of consumption, with the least amount of frictional wear and tear. Such, in general terms, is our ideal citizen.

It may be objected that, if such perfection were attained by a large number of individuals, the result might be a rather tedious monotony—that life, indeed,

among a nation of such well-balanced persons might be too correct, too regular, too automatic. But let objectors entertain no such fears in practice. We would remind them of what we have already said of perfection, that the term is a relative one—that the degrees of perfection are only known to us really by comparison with what is considered more or less perfect. Consequently our ideal citizen would correspond in practice to the central figure of a group of individuals who differed from him to some extent in every way conceivable. There need, therefore, be no dread of monotony. Nature would see to it, with her infinite productions of variation from type. This being so, although in our ideal nation the general standard of adaptation and adaptability would be increasingly raised, yet there would always exist positive, comparative, and superlative types. There would still arise those who would subserve the general good best in the humble capacities of hewers of wood and drawers of water, as there would also be those whose endowments qualified them for occupations of a relatively higher character. But in the efficient nation of our desire a comparatively small population, consuming and requiring only a small amount of the limited productions of the earth, would be able to more than hold its own against a much larger population of the present disorderly type. There would be vastly less wastage. For it must be remembered that the efficient man requires no more of the essentials of life than the inefficient—a fact of no slight economic significance in a world where everything must always be ultimately of limited amount. Consequently, our ideal State could carry on its functions satisfactorily, with a minimum density of population and a minimum degree of poverty and the evils of overcrowding, the which considerations are of vital importance to the general well-being and happiness of its people.

On the other hand, a nation could never be efficient that was under-populated, for there would then be no effective competition and no reserves for emergency. But each nation, in the world of our desire, should be populated to that degree, *and to that degree only*, which

maintains a healthy state of competition, internally and externally, but is not so overflowing with population that bloodshed, within or without, inevitably results. In such a world the irreplaceable natural resources would be most carefully husbanded, and not recklessly squandered away in constant warfare. Also, the inimical agencies of environment being everywhere reduced to their lowest possible limits by appropriate scientific method, the average expectation of human life would be correspondingly extended.

Such, in very brief, are our conceptions of the desirable citizen, nation, and world. Are they susceptible of realization? Have we a sound moral and scientific basis for affirming that these are not merely Utopian visions, but are just and reasonable propositions, capable of being established in real life? We submit that we have such a basis, that our conceptions are *not* mere idle dreams, and that they admit of a complete realization.

Rash, indeed, would be the man who denied the feasibility of our claims. We would only remind him of the many fundamental changes in outlook that have taken place in recent years—of the numerous instances of things once believed by the whole of humanity to be totally impossible and unattainable, but which, having been subjugated by modern scientific method, are now viewed even by the schoolboy as the veriest commonplaces. We would draw his attention to the sailing ship and stage coach of a few hundred years ago and the liner and railway train of to-day. We would refer him to the telegraph, the telephone, the aeroplane, and to wireless transmission. We would bid him recall to mind the old opinions, once generally and stubbornly held, concerning cosmogony, astronomy, and geology, and contrast them with those now accepted. And, finally, we would point to the immense and quite unprecedented hosts who, during the Great War, banded themselves together in a common cause to effect a common purpose. Accordingly, if it can be clearly demonstrated (and we claim that it can) that it is eminently for their good and necessary to

their happiness that peoples, nations, groups of nations, and finally the whole of humanity, should combine forces to achieve the desirable states we have pictured forth in this section ; and, further, if it can be shown that suitable means are already at hand (and we claim that they are) by which such results can be attained, then, as it seems to us, no well-wisher of the human race need ever despair of an ultimate success.

There are three agencies at present known and understood by man which, if combined and generally brought into operation throughout the world by mutual consent and international agreement, are quite capable of bringing about practical results closely approximating to our ideals. These are: eugenics, preventive medicine, and world population control. They can be brought into general action only by a sedulous system of world-wide education and propaganda. But there is no question that the nation or group of nations which first consistently adopted the chief principles of these agencies would quickly become the leader of humanity.

We will further consider all these methods in subsequent chapters. In our next section we propose to deal, very shortly, with some of the well-established facts of heredity and natural inheritance, the rational application of which to the human race constitutes a prominent part of the science now known as eugenics. It is not our intent to enter upon ground over which controversy still rages, but rather to emphasize the more practical and more generally recognized conclusions.

§ 6. *Heredity—Natural Inheritance*

From very early times there has existed a general, though vague and ill-defined, apprehension of the important part played by natural inheritance in the history of the races of living things. Embedded in language, as fossils in the rock, are yet to be found records of the thought and philosophy of a remote past ; and these treasures of the mind, embalmed in proverb, aphorism, or adage, have often survived long after the very names of

their originators have faded into oblivion. Indeed many of them may have but embodied the general persuasion of the time, focussed into apt compass by contemporary bard or poet, and so preserved. Be this as it may, and however compounded, it may be said of some of them that they often contain a portion of what is true, though rarely the whole truth. And this we should anticipate from their very nature. The soul of an aphorism, as of wit, lies in its brevity; if a complete proposition were attempted, much would be lost in subtle pithiness and compactness of expression, as well as it being thus rendered more difficult to memorize and transmit verbally, as was the ancient custom. Consequently we must make due allowance, and not expect too much of these interesting remnants. Some of them, of great antiquity, have a distinct bearing upon our present subject; hence this seeming digression. Who, for instance, is not familiar with, "Do men gather grapes of thorns, or figs of thistles?" "Like breeds like," and so forth?

But old though the subject of heredity undoubtedly is, it is only of comparatively recent times that scientific attention has been concentrated upon it to any purpose. This attention has been largely due, in the first place, to the extensive labours of our illustrious naturalist, Charles Darwin; and, somewhat later, to the researches of Francis Galton into natural inheritance in man. Among many early pioneers in the same field, to whom we are deeply indebted, occur such names as Gregor Mendel, Haeckel, Weismann, Spencer, and Huxley. Nor have workers been lacking in this promising realm of inquiry since the times of these great men. Many are engaged to-day in attempting to elucidate the obscure problems of inheritance, difficult and complex though they unquestionably are; and, although there yet remains a great deal to be done, our knowledge and understanding are steadily growing. Though many details still remain to be worked out regarding individual cases, certain important facts respecting broad averages have been already firmly established. A great deal of attention has recently been focussed upon the cell (animal and vege-

table), and light has been thrown, as a result, upon what is termed the mechanism of inheritance. This we now propose briefly to describe.

Every living thing, no matter how simple or elaborate its adult structure appear, consists originally of one cell; and all such cells are remarkably alike in appearance. The simplest form of life starts and finishes as a single cell; its individual existence, throughout its short life-history, is bound up in one single cell. But this cell very soon divides into two, both of which are new, separate lives; and these again presently divide directly into new individuals, and so on, indefinitely. Hence, with these organisms, so long as conditions remain favourable, "life," it might seem, never really comes to an end. Instead of growing old and dying, so soon as they become adult they split up into new lives, which continue the process. Though the life of the adult individual must cease—as such—when it divides into two equal parts, yet its corpse, if we may so say, takes the form of two new young individuals, each of which is alive—a truly remarkable state of affairs, regarded from the ordinary human standpoint.

When we turn to the case of the more complex organism we find that it also originates from a single cell; but the difference in this case is that, when this single cell divides and re-divides, as it quickly does, the new cells thus formed, instead of separating from each other, remain adherent; and this process continues till million upon million of these cells exist, agglutinated together in a mass. It is this coherent mass that constitutes the higher animal or plant. Such is man himself. He is derived from one cell—the fertilized ovum. The subsequent differentiations of certain cells, and certain groups of cells, all derived from the original one, which go to form his various organs and tissues, are but details in his life-history. The point of outstanding interest is that he, in common with all other organisms, springs from a single cell. His latest state is merely a mass of these (formed by division and re-division), which have here and there undergone modification, adhering together. In a

sense, therefore, he is not one life but many lives intimately bound together, as it were, for the common weal.

But when we remember these things ; when we contemplate the minute size of the fertilized ovum—a single cell ; when we examine under the microscope different samples of these, representing such widely-different creatures when adult, but all so amazingly similar in early appearance ; when we reflect that from one such cell is destined to develop a fish, from another a rabbit, from another an elephant, from another a Napoleon or a Newton—the immense interest and scope of the science of natural inheritance are immediately borne in upon us.

The ordinary body cell of a higher organism—derived, as stated, from the original fertilized ovum—is a minute speck of living protoplasm containing within it a more concentrated portion, which is known as the *nucleus*. The chemical elements that are found in it (be it animal or vegetable) are mainly carbon, hydrogen, oxygen, nitrogen, and traces of sulphur and phosphorus, loosely, and with great complexity, combined together. The nucleus, on close examination, is seen to contain a number of rod-like or filamentous structures. These are known as the *Chromosomes*, and they are remarkably alike in plants and animals. Their number varies greatly in different creatures, but is said to be constant for any particular species. Thus, C. C. Hurst, Ph.D., in illustrating extreme cases for number, gives a nematode thread-worm which has only two chromosomes in each nucleus, and a crayfish which has as many as two hundred. (In man the number is forty-eight.) When the ordinary body cell is about to multiply itself by dividing into two, the chromosomes of the nucleus first split longitudinally, and so double their number, one half of these passing to either pole of the “mother” cell. Thus, when the “mother” cell has divided into her two “daughter” cells, each of them contains the usual number of chromosomes.

The structure (and behaviour) of the *germ* cells—derived again from the original fertilized ovum—is similar to the above (i.e., to the body cell) up to a certain point.

They consist again of protoplasm, nucleus, and its chromosomes. The chromosomes in the nucleus of the reproductive cells are at first of the same number as that to be found in every other cell of the particular organism. But just before these cells reach maturity a peculiar thing happens. The number of chromosomes in the matured germ cell is *reduced by half*. This occurs in both male and female germ cells. Consequently, when the ripe male and female germ cells unite, the fertilized ovum thus formed contains the usual number of chromosomes—one half being derived in this way from the male (parent), and the other half from the female. These occurrences have been satisfactorily demonstrated by experimental biologists, and are of great significance to us in the study of natural inheritance, as we will presently show.

Strictly speaking, we inherit, not the things themselves, but *tendencies* to their attainment. In the case of a man with a wart over his left eyebrow, whose son also develops a similar wart over his left eyebrow, we say, in popular language, that the son has inherited the wart from his father. This is not really correct. What the son actually inherited from his father's germ cell was a tendency, a potentiality, to the development of a warty out-growth (a proliferation of cells) at a certain point. Again, we speak loosely of inherited consumption of the lung. What really is inherited, what actually is present in the fertilized ovum, is a tendency, or tendencies, whereby a certain defective type of lung and chest is produced, and also a constitutional lack or feebleness of resistance to the tubercle bacillus. It is the same with the inheritance of mental qualities. The fertilized ovum, compounded of male and female elements, may thus transmit a positive or a negative inheritance, if one be permitted to use the expressions. In short, it may contain too much or too little, as well as what may be called a normal amount. It may contain undesirable tendencies, tendencies that are feeble or impaired in character, or a deficient number of normal tendencies. Now these tendencies, or potentialities, which are transmitted from the

parents to the offspring, are known as Directive Forces, or Determinants, and it is now established that their position in the parental germ cells is in the chromosomes. They may be looked upon as a kind of biological ultimates; they are technically known as *Genes*. The development of every tissue of the brain and body is regarded as being brought about and controlled by the action of these forces or genes; and these genes are directly transmitted from each parent by means of the chromosomes of their respective germ cells to the resulting cell, the fertilized ovum, from which, in time and under favourable conditions, the adult creature develops. Of such a nature is the natural inheritance of man, and by such a mechanism is it brought about.

We are thus led to regard the fertilized human ovum with some true idea of its remarkable nature and capabilities. What mighty forces and potentialities are here crowded together in a narrow compass!—in this minute speck of living protoplasm! From this one is to emerge a man with the physique of a Hercules; from that, one with the lofty genius of a Shakespeare; from yet another, perchance, one with the faulty intelligence of the imbecile. In the whole length and breadth of nature does anything more admirably compact exist?

It is common knowledge that no two individuals are ever quite alike, no matter how nearly related. This observation applies to all living things. However close the resemblance may seem, complete similarity never occurs. Each individual varies to some extent from his ancestors, parents, brothers, and sisters. So far as we are aware, there are no exact reproductions. Such variations may be slight or great, and some of them are of extreme importance in evolution and heredity. For a long time there have been hot disputations as to the precise causes of their production. Probably they arise from the interaction of many complex agencies, exercising varying influences under varying conditions, and are consequently most difficult to estimate with exactitude. Of such may be named: The variable conditions attending the fusion

of the sex elements, including the then states of the parents, their respective ages, and states of health; questions relating to *which* germ cells and genes combine to form the fertilized ovum; the "blendings" of certain parental characters, the prepotency, dominance, or recessiveness of others; the different actions of the varying factors of environment, foods, poisons, toxines, and the like.

But, however brought about, the facts are completely established that variations from parental type are continually occurring, and that some of them tend very strongly to be inherited. Now these variations may be favourable (advantageous) or unfavourable (disadvantageous) to the organism in whom they occur. If favourable, the organism tends to be preserved, because it possesses, to some extent and in some direction, an advantage over its neighbours in the struggle for existence. But if unfavourable (and no doubt all tendencies to disease, mental impairment, and the like conditions have arisen and arise in this way, as disadvantageous variations) the organism tends to be eliminated in the course of Natural Selection, since it fails in the struggle owing to its disability. (It was upon these considerations that Darwin built up his great theory to account for the origin of new species.) So we see that under natural conditions (i.e., conditions not interfered with by man) any unfavourable variation which may arise, such as a tendency to tuberculosis, would be expected in a short time to disappear, and any favourable one to remain. But what do we actually find in our so-called civilization? We find that not only do unfavourable human variations occur, but that man is attempting to preserve them. We observe also that, although in this he is at present partially successful, yet the price he is paying is the suicidal one of overburdening and hindering in their multiplication those who have exhibited advantageous variations—the fittest, in fact. And, more surprising still, we find him even introducing a type of legislation which favours an increase in the numbers of the unfittest. But to this we will return.

From all these considerations the important facts emerge that, while there is of course a most marked tendency to resemble parents in a general way, there is also a tendency to vary somewhat, for better or for worse; and, further, that some of these variations (germinal variations, in fact) are hereditarily transmitted. So, if we revert to our adage, "Like breeds like," we find that it would be more properly expressed: "Like *tends* to breed like." Thus much for single, individual cases. But in dealing with broad averages, which concern themselves with the cases of many individuals massed together, we can predict inheritance with much exactitude. Thus, of a thousand children born of parents whose heights were above the average, we can prophesy with certainty that the height of the vast majority will be above the average. Also, of a thousand children born of mentally diseased or generally inefficient parents, the average will assuredly be mentally unsound or generally inefficient. And these are the well-established facts that are of so great an importance to us here.

We must now devote a few remarks to what are known as "Carriers" in the science of inheritance.

We have already seen that a man originates from the fertilized ovum—a one-celled mass of protoplasm, formed by the fusion of the male and female elements, or germ cells. We have seen that this contains a certain number of chromosomes, one half derived from the father, the other half from the mother, and that the directive forces, or determinants of inheritance—the genes—are contained in these chromosomes. The natural inheritance of a man consists, therefore, of the sum-total of everything present in the fertilized ovum from which he grows, including, of course, all the genes derived from his parents; and his growth and development (mental and physical), granted favourable conditions, are primarily determined by these directive forces. Consequently, if the single cell from which he originates were lacking from the first in certain determinants, he cannot subsequently acquire them; nor, if he have inherited undesirable determinants, can he later

rid himself of them. And these are fundamental facts that must never be lost sight of. Of course, for his full development he requires a favourable state of environment, and the more this can be improved by preventive medicine the better and more complete his development will be; but the point to be especially noted is that his *nature* is primarily and essentially dependent upon the quantity and quality of the elements he has inherited from his parents—upon the genes which were present in the fertilized ovum from which he originated. Thus, though improved environment can, and does, aid the directive powers of determinants already present by inheritance, it is quite impotent to supply determinants if they were lacking from the first. And this is to be noted carefully. Life, as we have said, being a struggle with environment (or, more exactly, with the adverse elements of environment), it is clear that for it to go on satisfactorily it is necessary that the natural inheritance should be of the best possible. A good natural inheritance will profit to the full by all the favourable factors of environment, and will put up a strong fight against the inimical. A poor inheritance, on the other hand, will respond feebly even to the good, and have little or no chance against the bad.

It is manifest, then, that we should propagate only from stock that is sound on *both* paternal and maternal sides.

But the case is complicated by the presence throughout the community of the so-called "carriers" of misfortune. These are individuals who *appear* to be normal. They exhibit no obvious defects themselves whatever, but they carry impaired, or even unfavourable determinants, lying latent, or recessive, in their germ plasms. A close inquiry into their ancestry, however, generally reveals the fact that they come of unsound stock upon one side or the other—that they have resulted from the mating of fit with unfit. Such individuals naturally constitute a grave danger to the race, as the extended study of Mendelian inheritance is yearly making more and more plain to understand.

In view of what has been said, it is extremely undesirable that "carriers" of any harmful factor should leave descendants. And it is from this standpoint that the mating of near relatives is sometimes so heavily fraught with peril. It is now considered that in the case of cousins, say, if each be descended from a perfectly sound stock, no harm will result. But if they have a common ancestor who presented any important transmissible defect, or was a "carrier" of such, then the case is entirely different. For, in this latter instance each of the potential parents (each cousin) may be a carrier of the defect, which would then certainly blossom forth in a proportion of the offspring born to them—such offspring, so to speak, having inherited a double dose of the mischief, one from each parent. Consequently, before near relations should intermarry, a stricter inquiry even than usual should obviously be instituted into their ancestry, and more especially into their *common* ancestry.

From the short description we have given of the well-grounded facts of natural inheritance and of the more practical conclusions to be drawn from them, we hope it is now evident from which stocks may be expected to emerge desirable, efficient, fit, and healthy citizens, and from which the absolute reverse—viz., the undesirable, the ineffective, the degenerate, and the unfit. We would lay especial stress upon the seriousness of the danger of racial deterioration, owing to the dissemination of unfitness through the agency of "carriers." The most terrible evil worked by them is the utter contamination of previously sound stocks by intermarriage. Everything should be done, therefore, to discourage a practice so devastating and far-reaching in its results. The one and only reliable safeguard is the institution of a thorough inquiry into ancestry, *upon both sides*, going back at least two generations, and preferably three. And great would often be the reward.

CHAPTER II

Sanctions for a Restriction of Unfit Population

AS the advisability of a so-called "artificial" restriction of human population has been fiercely debated in recent times, it is our present purpose to inquire: Whether a restriction is justifiable, and to what extent; what particular section of population, if any, has been *naturally* held in check throughout the course of organic evolution; whether information can be gathered therefrom, bearing upon the unsatisfactory state of modern society; and whether guidance can be obtained for our conduct of the future?

There is historical evidence that the evils resulting from an unrestricted population had presented themselves to some of the more thoughtful minds in the past. Both Plato and Aristotle, in their times, attempted to suggest remedies for these very conditions. But it was our own Malthus who, upwards of a hundred years ago, pointed out in his famous *Essay* the vital principle involved: that human population ever *tends* to increase faster than the means of subsistence available; that man tends always to multiply in geometrical ratio (as the numbers 1, 2, 4, 8, 16, etc.). And the ultimate rectitude of this view we have endeavoured to make plain in Section 1 of our Introduction. Human population, by increasing steadily year by year, is, in fact, now tending to overtake the food supply of the earth.

When we look around upon the world of living things, commonly termed organic nature, our senses are profoundly impressed by its multiform and pervading beauty. In a general way everything seems in harmonious accord with its surroundings, and we ask ourselves: Upon what

principle or natural law does all this exuberant health and charm depend? The key to the mystery is obviously to be found in Darwin's great theory of Natural Selection, whereby, in the struggle for existence, throughout all species of plants and animals, every weakly or inferior member is ruthlessly eliminated; only the strongest, healthiest, or most superior types, or those most perfectly adapted to their environment, being permitted to reach maturity.

In the vegetable kingdom the potentiality to increase is enormous. It was calculated by Huxley that a single plant, requiring one square foot of ground to maintain it, and producing fifty seeds in a year, could, with its progeny and their descendants, completely cover an uninhabited area of fertile ground, equal in extent to the earth's dry surface, in the remarkably short period of about nine years. During the next year there would be fifty competitors for each square foot of surface, forty-nine of whom would be doomed to death. Thus would arise a terrific struggle for life, which would continue, since there could be no increase of nourishment, but seeds would still be produced in the same ratio as before. Only such seeds and seedlings thenceforth as exhibited advantages (slightly earlier powers of germinating, greater vigour, etc.) over their fellows could have a chance of attaining maturity. And something of this kind, only in much more complex degree, is exactly what has happened, and still is happening, in nature. All the relatively unfit (less perfectly adapted) are eradicated.

In the animal kingdom the same principle is observable. Darwin stated that, in the case of the elephant (the slowest breeder known), from a single pair there could result a population of nineteen million in about seven hundred and fifty years, if there were no opposition to increase. So even with the slow-breeding elephant the earth could soon be stocked up to the limit of food supply. Of course, with a more prolific creature this would be effected much more rapidly. Again would come intense strife for food, and so on. These simple illustrations are very striking. But in

nature there are many other types of struggle super-added—viz., the ceaseless sex-battles of the males for the possession of the females, the destruction of herbivora by carnivora, and the eliminations caused by adverse climatic conditions, microbes, and parasites. In every case strength and fitness win the day. And this gives an explanation of that beauty so conspicuous to the observer.

The fair face of organic nature masks what is, in reality, a vast, though unobtrusive, battlefield. To the eye of the uninitiated nothing may be obvious beyond an appearance of smiling plenty; but to any who look beneath the surface of things a grim and unrelenting warfare is manifested. Even among seeds there is struggle (in the broad sense) for survival: those endowed with more effective plumes, or enclosed within the more tempting fruits, will have a better chance of being spread abroad by wind or bird—and so obtaining a root-place—than their less favoured competitors. With animals a little more endurance, a little more strength, a little more ferocity of disposition, a little more fleetness (in pursuit or escape), will determine to whom the victory be awarded. Thus we are forced to the conclusion that, with plants and animals below man, the unfit are always eliminated with the greatest severity, and are consequently prevented from perpetuating their kind; also that in each generation only the very strongest, or best adapted, are preserved and permitted to procreate. But it is to this relentless natural principle that progress towards perfection has been possible. Without it there would be no advance. And this result of our necessarily brief investigation cannot be too clearly borne in mind.

A study of our domesticated productions reveals the fact that man is, here at least, guided by an observation of Nature's laws. The scientific gardener, or breeder of animals, always propagates from his best stock (in any direction desired), and ruthlessly weeds out all that show inferior characteristics. For he knows full well from experience that unfavourable variations are just as surely

transmitted by inheritance as those that are favourable. Strange indeed would be the mind of the breeder, and unhappy his results, who allowed the weaklings of his produce to procreate their kind!

The works by travellers of repute clearly show that the practices and general methods of life indulged in by savage tribes of man are the reverse of favourable to the preservation among them of those in any way below a high standard of vigour. The most feared warrior possesses by right the greatest number of wives, and therefore leaves the largest progeny. The women lead so extremely arduous an existence, and receive such evil treatment from their men folk, that only the strongest, generally speaking, are capable of surviving and rearing a family, most of the responsibilities of which devolve upon their shoulders. Among other causes tending to stamp out the weakly members of savage life may be named—famine, extremes in diet, constant hand-to-hand warfare, disease, child-murder, tradition. We observe, then, that here again the unfit are rigorously held in check, and necessarily so, as complete extermination of a feeble tribe would quickly take place through the agency of one more generally virile.

We now arrive at that topmost pinnacle of the organic world—modern civilized man. Here we meet with strange anomalies. In many cases man walks hand-in-hand with Nature, studying her laws, acting in accordance with them, combining them favourably to his purposes, and reaps a harvest of benefit. But in others he tampers unwisely with her canons, opposes himself directly to her precepts, and is, in the end, hurled back bleeding or ground to powder in the attempt. In regard to human population he has been inclined to adopt this latter course. In endeavouring to conserve *all* life, he has neglected the strict doctrines of Nature concerning which particular forms of life are to be favoured and which discarded. This path is entrenched with danger. To it he is led by his feelings of sympathy and benevolence—noble qualities when rightly understood and employed with a becoming discernment, but, misapplied, only too apt to produce results exactly contrary to those intended.

We must discriminate between the benevolence that is merely apparent and that which is really beneficial; between that which exhausts itself upon symptoms and that which goes to the root of things and deals with causes; between the short-sighted variety—to palliate the present at any cost—and that which concerns itself not only with the present, but has an earnest regard for the future also. For to confer some degree of seeming benefit upon the few of the present, whereby the general happiness and progress of the many of the future would be sacrificed, is scarcely to perform a good work. In short, it is clearly the function of true benevolence to meliorate existing poverty and distress, especially when resulting from misadventure transcending the powers of human foresight, but it must set its face resolutely against the multiplication of any showing transmissible hereditary taints. Such a just attitude has little in common with a species of pallid sentimentalism—very prevalent among us to-day. It is a sinister fact that our moral code has so little regard for the physical and mental equipment of future generations. The warnings of science are disregarded. And this is the rift in our armour which, if not remedied by determined action, will doubtless suffice to send modern civilization tottering to its doom.

Let us see what bearings these reflections have upon methods in vogue of dealing with the very poor, the improvident, the unemployed, the unfit. As stated in the Introduction, and for the reasons there given, the struggle for existence has been considerably modified by the march of modern civilization. Consequently Natural Selection (although showing itself in infant mortality rates, during epidemics, and the like) has in many ways been laid out of action, so to speak—certainly for the time being. During our present delusive period of plenty the severity of the struggle between man and man—save in war time—is noticed to be much mitigated and altered in character when compared with the past: instead of its being a grim contest to the death for the very essentials of existence, it has assumed more the nature of a

sharp competition for those things that are embodied in the comprehensive expression, "a high standard of living." The outlet now for man's forces in the strife for supremacy is mainly through the channel of the intellect. And in this direction, so long as he does not overstep the law, he may indulge his own particular powers to the full extent of their capacity; forging his way ahead, trampling upon his weaker opponents, climbing to fame or fortune, universally acclaimed by society. Thus the fittest still tend to rise and the unfit to fall, as in a state of nature. But there is this vast difference. In nature the unfit are eliminated and prevented from multiplying; in modern human society the unfit are *not* permitted to perish. Benevolence (systematized or private) steps in at this point and claims them as her own. They are even encouraged to marry—at the expense of the fit—and propagate their kind; of which amazing sanction many of them avail themselves to the full, and flood the State with multitudinous, though feeble, offspring! Work-houses are erected for their reception; poor laws are enacted for their relief; doles are distributed when they are unemployed (which in some cases is chronic); subsidies are granted to create an artificial price for their labour; asylums (in which they may temporarily recover, and afterwards return to society and become parents!) are available for their insane; institutions of all kinds are financed for the rearing of their weakling progeny. In fact, the tendency seems to be to afford every facility for their preservation. And, though seemingly many of these institutions have owed their origin to the most charitable of motives, it cannot be denied that a continued multiplication of unfitness has necessarily been one of the results. Instead of personal pride and independence being sedulously fostered, it would appear that these are to be destroyed and their very opposites encouraged. It is, indeed, to be wondered at that affairs are not even worse than they are. But pride, independence of spirit, and prudence are not yet dead in any grade of society. And so long as they remain with us there is always hope for the future. Moreover, the natural tendency of fit to mate

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with fit (healthful beauty in the female with power in the male) is extremely beneficial to the race. But the inheritance of riches in some cases, and overcrowding with its great moral evils in others, militate against the formation of these favourable unions.

A visit to the slums, whose teeming denizens constitute so large a part of our population, will quickly convince us that all is not well here. There is little in these regions to remind us of the smiling aspect of "wild" nature. Overcrowding, squalor, dirt, inherited disability, improvidence, idleness, misery, and vice thrust themselves upon the view. There is abundant evidence here, surely, of the inferior variations of humanity being preserved and permitted to multiply, in defiance of all Nature's teachings. Nor are similar, though less obtrusive, anomalies lacking throughout every reach of society.

What are the conclusions to be drawn from our survey? Briefly stated they are: that throughout the entire vegetable and animal kingdoms in a state of nature, as in the case of uncivilized man, there is a complete extirpation, with prevention of the multiplication, of all that are relatively unfit; that only the fittest and their progeny are preserved; that this principle is essential for progress towards perfection; and that it has been applied with success by man to his domesticated plants and animals. We have further seen that, in the case of modern civilized man, there is a strong tendency to set this law of nature aside, and that an attempt is being made in a contrary direction—namely, to preserve the products of unfortunate human variations and allow them to multiply at the expense, and to the detriment, of the fittest; in fact, to act directly in opposition to the behests of Nature. The obvious tendency of such proceedings is to increase unemployment, pauperism, inherited misfortunes, laziness, misery, and vice, without promoting human happiness or progress; indeed, the reverse. Also they tend to depress the fit, to reduce the numbers of the provident, and to plunge the nation as a whole into immense and yearly-increasing expenditure. That such a state of affairs cannot continue indefinitely is only too terribly evident.

We are drawing heavily upon the accumulated resources of the past. When these fail, a drastic revulsion must be totally unavoidable. Let us hope that a warning will be taken in time—before, in fact, the unfit become too numerous.

What is needed? Manifestly some form of restriction of population. And, from all analogy, unequivocally, it is the unfit section that requires restraint; otherwise, at no very distant period, fit and unfit will be submerged together in a pestilent morass of inherited evils, doles, debts, and degeneracy.

Regarding the more vigorous sections of the community, these should be at first encouraged to increase to maintain a healthy degree of competition, always essential for progress. Nor would they require much encouragement, we imagine, were the incubus of supporting so many "unproductives" once removed from their stalwart shoulders. But to this subject we will return in Chapter VIII.

Would such a restriction desecrate the great principle of individual rights? We submit that it would not. On the contrary, many existing wrongs would be righted. In a highly civilized society an individual, once born, cannot be allowed to perish. The helping hand must be tendered; and such help can come only from the fittest and most provident members. This being so, we contend that the unfit man who deliberately begets a numerous and valueless progeny, without even any reasonable prospects of being able to support them by his own efforts, infringes the rights of his efficient neighbour just as surely as though he had literally picked his pocket. On the monstrous cruelty of producing children with definite hereditary defects it is needless here to dwell. We consider, then, that a sound plea for restriction of the unfit has been established.

An appeal to history admonishes us that laws passed without reference to public feeling are often disastrous in effect. And it may be doubted whether the time is yet ripe for a complete legislation to step in. The urgent indication to those in authority is first to promote a

diffusion of knowledge among the masses upon the subjects here discussed, showing that a restriction of population in accordance with the teachings of nature, of common sense, and of humanity is fundamental for continued progress and the increased happiness of all. The remedies for future unfitness and misery lie in restraint and foresight. But if the comparative few will not practise these virtues it becomes at last the obvious duty of the many to resort to coercion in defence of the common weal. We cannot eradicate existing unfitness, but we can prevent its continuance and multiplication by limiting reproduction. (The means at our disposal for effecting this end are considered in Chapter VI.)

This is the position. On the one hand is encamped rebellious Man, with his passions, his imperfect understanding, his weak sentimentalism, his short-sighted benevolence; on the other is arrayed stern Nature, with her impassable laws. It is an unequal contest, and a foolish one. The result can only be a question of time.

To avert the peril of utter ruin, then, we must alter our courses before it is too late. We have been striving to preserve the unfit in the vain hope of being able to transmute them into sound human creatures. And in this futile attempt, although we have thus far completely failed, we are still risking and reducing our chances of a general racial improvement. The time has come, however, when we must cease from endeavouring to work miracles. While it is now clearly our high duty to aid in the direction of the evolutionary process (indeed, if we do not, retrogression stares us in the face), yet we must do so with due care, consistency, and subtlety of purpose, taking special note and warning from what has gone before. We must remember that Nature has had the sole control of population, in all its divisions, for millions of years before the growing intelligence of man rendered him capable of taking a hand in it. Her experience is therefore an immense one; and at least one vital lesson to be learned from her is plain to read. It is: that for evolutionary advance to go forward—for progress

to continue—the less fit must not prey upon the fit to their detriment, but must be stamped out, root and branch, in some way, so that room shall exist for the expansion and still further progress of the fittest.

Now we are all familiar with Nature's ruthless, though ultimately effective, methods of gaining these ends. But if we wish for advance, even though we may not approve of the means which she employs, we must nevertheless see to it that we follow her in general principle. We must arrange, therefore, that our results are closely similar, though we make use of other and more humane instruments. Accordingly, since we cannot now imitate our brutal ancestors and club the unfit to death, we must take every reasonable precaution in our power to prevent their *ever being born*. In short, we must substitute Eugenic Reform in place of Natural Selection; Scientific Method in place of the pitiless forces of Nature.

Such, then, is the guidance we have obtained for future conduct. If we refrain from following it—if we continue in our present courses—we oppose ourselves directly to nature, not only in method, but in principle also.

CHAPTER III

Unemployment from the Biological Standpoint¹

IN dealing briefly with this vexed question it must be understood at the outset that the remarks made will apply mainly to broad averages, and are, therefore, not necessarily directly applicable to every individual case or community.

Unemployment signifies a state of being "out of work," of not being "put to use" or "profit." How is it that in an age in which the human mind has soared to such transcendent heights in inventive genius of almost every description no man has yet been found capable of solving the unemployment problem? This question is perpetually being asked; sometimes almost wrathfully, amazedly, or contemptuously, as though the conundrum were simple, and only required a little painstaking perseverance. It is also said that, if one particular "party" cannot successfully deal with the matter, it should give place to another which could, and so on. The origin and causes of unemployment, however, are manifestly very deeply rooted, and perhaps the answer to the question is: That under existing natural and artificial conditions the problem is not capable of satisfactory solution; that palliative measures must suffice for the present, but that the future, with its promise of higher evolutionary change, may perchance furnish alleviation. It should be the hope, the aim, the ambition of modern man with his enlightened intellect to hasten and assist such change. A thorough inquiry into the biological phenomena producing unemployment will doubtless throw some light upon the subject.

Now what would complete employment mean or necessitate? What conditions must be fulfilled so that every

¹ This chapter appeared in the *English Review*, December, 1926.

person may be in a position to earn his (or her) daily bread? Clearly, each individual must be *capable* of performing his work, and there must be a constant *demand* for his services. Do these conditions occur in modern civilized nations? It is with the first that I am chiefly concerned. There are many factors to prevent the would-be worker from being capable of performing his duties, as there are also many causes which produce fluctuations in the demand for his services. On the face of it, it appears unreasonable to expect that an exact balance can ever be struck and maintained between the numbers of those (in all their heterogeneity) who require employment and the demand for their labour, as both are constantly changing quantities. In primitive times, where man had unlimited space and killed freely, the question was less complex. But among our great civilized nations, where space is scanty and population immense, the amount of dependence of one upon another is enormously increased; also human life is viewed as sacred. It is owing to this dependence of man upon man, and even of nation upon nation, that the question of unemployment has become so involved—alterations in the demand for labour being influenced by causes acting both locally and from afar.

At present unemployment is much in excess of its "normal," owing, it is claimed, to the effects of the War. Hence some of the perfectly fit are unemployed. Time and the gradual settling of international conditions should reduce the list.

Who are the employed? They are the "fittest," or those most capable of performing the services in return for which they receive the means of livelihood. They are (broadly) the strongest, healthiest, most energetic and efficient members of the community. This answer must be correct, for if we contemplate the converse, namely, that the employed are the least fit, the least capable, the weakest, the intemperate, etc., we are at once confronted by absurdity. We conclude, then, that men will be employed first who have natural advantages over other men; and that the next, and next, to be required will

depend in like manner upon their relative degrees of endowment.

A very simple yet forcible illustration of this kind of selection is the choice of two football sides at school. The boys not chosen by either captain will naturally be known as the least efficient footballers. The same principle is observable in every industry or profession: wherever there are more applicants than vacancies, the result will be the same; and wherever there is an excess of population, there will be a corresponding excess of applicants over vacancies.

A highly-progressive, flourishing, civilized nation requires an excess of population.¹ It is a natural law of progress, real and inexorable. Strong and advancing evolution can only go on so long as there is a sufficiency of material for its grinding mill: this has been the rule through countless ages from the remotest past. It is ever the same—the stronger triumphing over the strong, the strong over the weak, the weak over the hopelessly incapable; and in this relentless march the strong gain in strength and transmit an inheritance of strength through generations into the future.

The value of competition in promoting efficiency is recognized everywhere. Competitive examinations produce high efficiency. Even into examinations not avowedly competitive the same spirit of competition insensibly enters. Hence we see that for a nation to keep on advancing there must be a sufficiency of population to maintain a spirit of competition. Otherwise it will fail in its struggle with other nations, and will surely and progressively sink into oblivion. But so long as human nature remains as it is to-day, with its passions and potentialities so vastly in excess of apparent need, we may safely conclude that some degree of over-population and unemployment will continue. It is an unfortunate fact that the over-population, at present, occurs mainly

¹ This refers to a population of the present disorderly type. Under a system of Eugenic Control, of course, a much less severe degree of competition would suffice.

among the very poor, the unhealthy, and improvident, thus adding greatly to their personal difficulties and increasing national expenditure.

The far-reaching effects of the marriage question, entailing, as it does, the very life or death—the progressive evolution or the decay—of posterity, cannot be over-emphasized. Matrimony, instead of being a blessing, is, under existing conditions, only too often the rock upon which struggling humanity is shipwrecked. Fit should never mate with unfit!

To sum up, briefly, the requirements for employment and worldly success, they are: ability, zeal, energy, good general health and strength, and ambition. If these are *all* present in the same individual, balanced and in harmony with each other, the very acme of efficiency is attainable. It is an undoubted fact that all these characteristics show a very strong tendency to be transmitted by inheritance from generation to generation.

We must now inquire: What are the characteristics contributing to worldly failure, unemployment, and poverty? These have been already implied. They are the exact opposite of those just described. Who are the unemployed? Many of them must be persons who have not been endowed by heredity with the characteristics essential for success in the competition of life as it is to-day. Many of them, no doubt, are possessed of such characteristics, but only in a minor degree, compared with those with whom they have to strive. Many of them, again, may possess some of these faculties in marked degree, but, other faculties being lacking, these first valuable assets are rendered inoperative. For one (or more) faculty to function to its greatest advantage it must be supported by one or more other faculties of a correlated nature. Thus energy, without a capable brain or a powerful and well co-ordinated muscular apparatus, would be of little value to its owner. No doubt a good deal of inefficiency and unemployment is due to this cause.

From whence come the unemployed? What was their parentage? The outstanding cause in the production of

a large section of the very poor and unemployed is hereditary transmission of unfortunate and useless attributes, including diseases, and transmitted tendencies to it. Persons afflicted with hereditary tendencies to tuberculosis, insanity, specific disease, malformations, general debility, criminality, intemperance, drug habits, incapacity, laziness, and many allied conditions, cannot compete successfully with persons gifted by inheritance with the converse. Any one who has visited the very poor of this country in their homes must have noted the ravages caused by these tendencies, and deplored the certainty of their perpetuation by marriage. And marry they do, often leaving large families to swell the number of the unfit.

Among other causes of incapability to work and consequent unemployment are: (1) Accident; (2) premature old age (age over seventy years is provided for in this country, and this age limit might well be somewhat reduced, so as to include the many poor inhabitants of large towns who have become prematurely old owing to the conditions of life); (3) the prolonged receipt of the dole; (4) improvident marriage.

What is the proportion of unemployed to employed? For a nation to be successful in international competition a decided majority of the working element of its population must be in a state of being "put to use" or "profit." Such a majority exists in all dominant nations. Roughly, to represent statistics available to-day, let us suppose a nation having 20,000,000 would-be workers: 18,000,000 are employed; 2,000,000 unemployed. In other words, there are ten applicants for every nine vacancies. Hence, in general terms, the one unemployed must be regarded as the least efficient of the ten. So we conclude that the bulk of unemployed must be individuals well below their national average for purposes of utility.

Laziness, which is often connected with unemployment, is undoubtedly hereditary, but every man has the power to develop what energy he possesses (for general

utility) to the extent of its inherent capacity—just as he can develop his biceps muscles—and it is his duty to society to do so.

Turning to methods of dealing with unemployment there are: For the present time (palliative), creation of employment, and the dole. For the future (partially remedial), the biological method.

1. Creation of employment by Government is a much-debated subject. Its advantage is that the devastating effects of receiving the dole, and doing no work, would be reduced. The disadvantage is that immense sums of national money may be hopelessly locked up (or lost) in financing such enterprises, with little chance of return. I would urge, however, that in large centres those who are perfectly fit among the unemployed, and who apply for the dole, should be kept occupied in some way—were it only by a daily course of semi-military training.

2. The dole, removing fear of loss of work, should always be regarded as the most temporary of measures, to be adopted only in times of special emergency. The dole is a pill pregnant with danger, despite its sugared exterior. It contains a drug producing varying effects upon those who swallow it; and, like all such, should be administered with extreme caution. To a few, perhaps, it may be beneficial; to the many it acts as a virulent narcotic poison, and a habit is readily formed—the dole habit—whereby a craving is established to keep on taking it, and ask for more! In brief, to broadcast the dole indiscriminately, and for long periods, is to broadcast the germs of degeneracy. A man, when old enough to face the world, should be remunerated according to his value to society, and only so. For a healthy condition to obtain, individual merit must be recognized, otherwise callousness and decay are engendered. To occupy “unemployed” time, so as not to degenerate physically, intellectually, or morally, is one of the stiffest problems, and to expose any one to it is to incur a grave responsibility. The dole, in time, benumbs that stimulus to exertion for self-support which is vital to healthy manhood. Finally, it makes men *incapable* of performing a

good day's work, and thus *creates* unfitness and consequent continued unemployment.

The days of primitive measures for reducing the population are gone. Human life, once generated, has acquired a new sanctity. Much work is now performed among the very poor and unfit to assist them in the rearing of their children, and in general hygiene. Much is done to stamp out, and prevent the incidence of, infectious disease. Much is done for the insane. In short, everything is being done to eradicate or render inoperative those natural means by which useless population was once held in abeyance. But all thinkers must realize that the conserving of the unfit and their ever-increasing offspring entails a very grave danger to the future welfare of a nation. Such a nation is, in fact, tending and protecting that which may ultimately prove its downfall.

3. Biological method. We have already seen that quite a large proportion of the unemployed is composed of the more or less unfit. It is with these and their progeny that we have principally to deal. If we can reduce this progeny, and promote an increase in the progeny of the fit, we shall be well on the way to solving, in part, the riddle of unemployment. For a nation to be successful there must be competition among its component units. Hence there must always exist some degree of unemployment. But by reducing the amount of unfitness we increase the number of the employable. Also, by raising the standard of individual fitness, we necessarily raise a nation's relative efficiency in international competition.

The unfit are found in every grade of society. The strong tendency to inheritance of all attributes that go to constitute fitness and unfitness has been emphasized.

Vast improvements have been made in our domesticated plants and animals. Darwin's works on these subjects are conclusive. One has merely to consult a modern horticulturist or breeder of animals to obtain confirmation of this. Why, therefore, should not the same sound principles be applied to man before the stream of progress tends to wind and turn back upon

itself, as it threatens to do? In brief, marriage must be looked upon from a standpoint entirely different from that obtaining among both rich and poor. The far-reaching effects of heredity must be taken into account. A strong public opinion at first, backed at a later stage by law, must control the parentage of children in every grade of society. This can be effected mainly through the press, from the pulpit, and, perhaps, by the film. Those rendered unfit from any of the hereditary causes previously enumerated should not be allowed to leave offspring. If the amount of misery produced were taken as a criterion, murder would sometimes appear a small offence, compared with what takes place every day uncensured—namely, the birth of a child condemned to a life of suffering through the inheritance of its parents' misfortunes (diseases and other wretched attributes). It is certain that the general public, and those in authority, will one day realize the vast force of heredity, not only as an interesting phenomenon, as at present, but as a very real, practical, and, in certain cases, terrible truth. When this is established, a great wave of feeling will be aroused against the present system of parentage, where most, if not all, is left to chance, concerning the health and constitution of offspring.

Sentimentalists may argue that procreation is a primitive instinct—not to be interfered with. We can only point out to such that many primitive instincts (to murder, to steal, etc.) have been recognized as distinctly inimical to society, and are now dealt with by law. A member of a highly complex society owes that society many duties. He cannot regard himself as a free agent. He is not free to take his own life; why should he be free to produce life?

A study of religious institutions shows that celibacy, on quite a large scale, is not only possible, but attainable. There are still teachers who proclaim that dismal and fatalistic law of heredity: that unfortunate characteristics shall continue to the third and fourth generation. Their time would be better occupied in describing how such misfortunes can be limited to a single generation.

In short, every effort should be made to attract public attention to this problem. For there is no shadow of doubt that, if the principles sketched were adopted, our nation could be rendered more prosperous, more efficient, more powerful, and healthy and strong throughout, with a minimum of unemployment and poverty.

CHAPTER IV

The Emigration Dilemma

THERE is still a widespread popular notion that emigration is a kind of general and everlasting panacea for almost every ill, social and economic. Labour unrest, it is affirmed, can be cured by it; poverty, distress, unemployment, and overcrowding are all amenable to its healing influence. One wearies of hearing the oft-reiterated phrases, "Why do they not emigrate?", "Our Colonies are crying out for them!", "Why won't they go?", "Why doesn't the Government send them?"—and similar random utterances. A closer examination of the questions involved in emigration, however, will cast some very different side-lights upon this complicated subject, and reveal the fallacies underlying many of these expressions; but until this is accomplished, and the disadvantages and difficulties more widely appreciated, the public mind will ever continue to nurse its pet theories and faulty generalizations, refusing the while to seek relief in other more profitable though less-explored regions.

In the past migration has been for the most part a continuous flow from the more to the less populous areas. Its immediate causes have been overcrowding, lack of scope for expansion, political and religious disagreements, natural enterprise in individuals, love of adventure, hope of gain, enticing communications from friends already emigrated, and the like. The deterrents from emigration were love of native land, home, and its associations; fear of the vicissitudes to be encountered in a new country and climate; physical disability. But in a general way there were few, if any, restrictions imposed upon emigration or immigration. Towards the end of the last century the vast bulk of our emigrants went to the United States of

America and our Dominions, a greater proportion of them entering the former, until a few years before the Great War, when the proportions were reversed. When we consider the hardships and privations that must be endured in the opening up of a new (or comparatively new) country, we are at once led to some idea of the type of person who would naturally emigrate or who would become a successful immigrant. Health, adaptability, boldness, thrift, ambition, and energy are the essentials. This being obviously so, we cannot escape the conclusion that the great majority of emigrants must always have been individuals somewhat *above* their national average; and, when we bear in mind the great numbers of such persons who have emigrated year by year in the past, the loss in good stock to our home population at once becomes manifest.

But whatever was the quality or value of the average emigrant in the past, it is quite clear that to-day his standard of efficiency must be a high one. During recent years conditions have markedly changed. Immigration laws have been passed almost universally. The U.S.A. have brought into force stringent regulations concerning those entering their country. They have debarred the tubercular, the insane, the mentally and physically defective; also in 1917, 1921, and 1924 they established a "quota" system, permitting only certain numbers of migrants to enter annually from the various nations. Whereas in 1914 some 1,100,000 immigrants entered the U.S.A., now only about 150,000 (from all nations) are allowed to enter yearly. In Canada and Australia very similar regulations as to the physical and mental condition of immigrants have been instituted. Furthermore, in cases of "assisted" emigration to our Dominions it would seem that even a higher standard of fitness is required (Professor Carr-Saunders, in the *Eugenics Review*, January, 1927). From these facts we see plainly that the nations are at last beginning to recognize the immense importance of the science of heredity, and to legislate accordingly. Further, we cannot but realize that, whatever be the physical and mental calibre of the children

we allow to be produced in this country, the U.S.A. and our own Dominions will only permit a carefully selected sample to enter their gates. They will take only of our best; we must retain the worst. Our efficient may emigrate; our inefficient must remain in the land that bred them.

The grave effects of this upon our home population is obvious. If we persistently abstract those only who are above the mean, those below it (if unchecked) will naturally tend to accumulate and become relatively more numerous. And it is generally admitted to-day that conditions with us, owing to the reckless distribution of doles and reliefs, are so favourable to the increase of these latter that the population is now being excessively recruited from this improvident and undesirable source. The natural tendency of population to increase may be likened to a compressed spring—always ready to bound forward once the impeding influence is relaxed. In a fully-stocked old country (like our own) population is restrained mainly by mutual pressure. But if a portion of the population is suddenly removed, as by a large emigration, a temporary void is created, which, other things remaining as before, tends to be filled up quickly by a sudden rise in the birth-rate, which immediately and inevitably follows. And this increase will occur, for the reasons already stated, conspicuously among the more useless members of the community. There is little doubt that if one half of the population of this country were suddenly eliminated, the full original number would be recovered in the short space of about twenty-five years, apart from any immigration, always granted that the food supply and other things remained as before. And from this it is manifest that emigration, at best, can only have a very temporary influence upon overcrowding; it is merely a palliative. We conclude, then, that under existing conditions of doles and reliefs, and the unchecked multiplications of improvidents and those below the national average, emigration on anything like a *large* scale is bound to have a most disastrous effect upon the quality of the home population.

Would extended emigration relieve our present unemployment? It is becoming daily more apparent that the great bulk of our unemployed (except during strikes and long periods of trade depression) is really composed of individuals who are more or less unemployable. In the last chapter we brought forward arguments to show that the majority of the unemployed are "well below the national average for purposes of utility." If this is true (and we are convinced that it is), our Dominions could scarcely be expected to be "crying out for them"! We submit, in fact, that their attitude towards these unfortunates is quite the reverse. The material they are urgently in need of is of a very different character. They require vigorous, sturdy men of the pioneer breed to carry new railroads over arid tracts of waste, to face with a smile extremes of climate and heavy toil; they require skilled artisans and efficient settlers to stabilize and cultivate the lands reclaimed from nature. Can it be said that our average unemployed embody such requisites as these? No doubt a small percentage of them are perfectly fit. But, so long as doles and reliefs are easily obtainable here, many even of these may not be stimulated to emigrate, since emigration depends not only upon the attractions of a new country but on the conditions obtaining in the old one as well. And nowhere are conditions more favourable for the unemployed than in England to-day: of which fact we have had a most illuminating example during the recent protracted coal strike!

Thus we find ourselves in the very equivocal position of being situated between the horns of a dilemma. On the one hand it is unquestionable that our Dominions of Canada and Australia require (and should be supplied with) sound men of British stock for purposes of extension, solidification, and defence of Empire. Also we in Great Britain certainly appear absurdly overcrowded when compared with them. Here we have at least three hundred and ninety individuals to the square mile; in the Dominions, it is stated, there are less than three. The urgent need of immigrants is admitted. But on the

other hand, under existing legislation, to supply suitable individuals from this country is to draw heavily from our valuable elements of population, and allow of their replacement to an alarming extent by the multiplication of those considerably below the national average, thus weakening our mother country's stock increasingly year by year and aggravating our present difficulties.

Is there any escape from this impasse? Under our present misguided system of philanthropy, taxation, doles, reliefs, etc., there appears to be none. The only reasonable solution of the problem lies in Eugenic Reform, coupled with a gradual diminution of the various reliefs. To-day those of our population who are of average efficiency, or above the average, are encumbered by being compelled to support those who are below it, and are in consequence prevented from multiplying freely and naturally, as they would otherwise certainly do. But if laws were passed suppressing the multiplication of our relatively degenerate—if, in fact, the right to marry and procreate had to be established by each individual—an immediate spur would be given to the increase of our more vigorous elements, since expenditure on reliefs would then be rapidly reduced. If only the obviously unfit (insane, mentally defective, tubercular, etc.) were restrained, a great good would quickly result. Then, indeed, would a more extensive emigration to our Colonies (and especially to Australia) be an advantage and a blessing to all, and a yet further stimulus would be given by it to the continued multiplication in this land of a population of the right sort. But, as we are circumstanced to-day, it is certain that the very people whom we wish most to be rid of will be the last to emigrate, even should other nations be willing to receive them; while those whom we can ill afford to lose will be the first and only persons to depart. Great and pressing, therefore, is our need for internal reform, since emigration, by continually going on, is every year enfeebling the character of our population at home and increasing our vulnerability.

CHAPTER V

The Falling Birth-rate

FROM time to time, proceeding from a multitude of sources, a dismal refrain reaches us. Its burthen is generally much the same in character, and one is becoming familiar with its mournful melody. Sometimes it assumes the guise of "Indignant Patriot"; at others, the rôle of "Outraged Religionist." "The birth-rate," it complains, "is falling! How can the world go on? We must produce more babies, or perish!"

This is its most common form, very vague and general. But ever and anon a more particular note is attempted, rising and falling with the depression or prosperity of the country denounced. First and foremost the accusing finger is pointed at the birth-rate of Britain; then at our Colonies; then, perchance, the United States of America is roundly abused. France, we are informed, is losing ground rapidly, and is practically extinct! Once again, may be, the fault lies with all the White races: they are becoming utterly infertile (and this is said in spite of the fact that statistics show that in many cases their actual rates of increase per thousand are much higher than the average rate of increase per thousand for the whole world!). Their doom, for this alleged reason, is hastening upon them!—and so forth. In demonstration of these things, one-sided statistics are rushed forward and emphasized. Our birth-rate per thousand of sixty years ago is triumphantly placed side by side with that of to-day. Terrific conclusions are drawn; awful prophecies are muttered. And all this is frequently done with little or no reference to the relative sizes of the populations dealt with, the areas of the countries inhabited, the past and present densities of the populations or their prevailing standards of culture and living, or the past and

present death-rates. It is often not stated whether the population under censure is increasing or decreasing as a whole; nor is there usually any attempt made to give estimates, which would show whether the birth-rate were declining, especially, in any particular section of the community—whether, in fact, one section were unduly multiplying at the expense of another. There is, indeed, for the most part, little faculty of intelligent discrimination to be observed; all is heaped together into the one baleful lamentation: "The birth-rate is falling!" And the public mind goes home, puzzled and vaguely distressed, with a sort of feeling that, however overcrowded the streets may seem to its simple understanding, the statements made in the newspaper must be right—that in spite of appearances the streets are not really overcrowded; that the teeming millions of slum life must be merely figments of a disordered imagination; and that, if only the nation, or the nations, could, or would, produce with greater celerity more and more infants of any kind whatsoever, all might yet be well. Truly and indeed may a one-sided parade of statistics mislead the unsophisticated!

The wise man, however, after hearing or reading this kind of thing, treats it with caution and swallows it in combination with an appropriate amount of the salt of reason; but, unfortunately, his improvident neighbour is only too glad to gulp it down wholesale, finding in it not only a ready panacea for any qualms he may have had upon the subject, but, in addition, an all-sufficing excuse for a still further reckless indulgence at the expense of the ratepayer. In this way are the seeds of a continued indiscriminative increase of the wrong sort of population being sown even to-day. The fundamental questions of food supply, differential birth-rate, fitness and unfitness, and existing density of population would appear to be of little moment. Our lamenter of a falling birth-rate demands only the immediate production of more mouths to fill, without concerning himself with such a trifle as from whence the many essentials of modern civilization are to come. Perhaps he may even go so far, if pressed, as to say, "They may compete for them" (as, in practice, they

certainly would do—and with knives!); or, “The State can easily provide for these people—always.” But more probably, as it seems to us, such questions fail entirely to carry any true significance to his bigoted enthusiasm. Be this as it may, however, we cannot help thinking, were a choice possible, that most of us would prefer for a parent one who made reasonably sure that a sufficiency, not only of the bare necessities, but of all those other things that combine to constitute a decent standard of life, were forthcoming—*before* producing the family!

Let us now consider under what conditions a rapid growth of population, associated with a high birth-rate, would naturally occur. The early essentials are: a favourable climate, neither too hot nor too cold, with a sufficient rainfall; abundance of food (animal and vegetable) upon the spot, and a large area of fertile, sparsely-populated country adjoining, wherein to produce more. Later, for further expansion at the same rate, and especially for the White races, there should occur native coal, oil, and the common minerals; and there should exist a free, open seaboard. Under these conditions, and so long as such remain, human population will increase at its maximum rate of geometrical progression. It will double itself in about every twenty-five years. The early history of the United States of America furnishes a complete practical illustration of these statements.

But this kind of thing can obviously last only for a limited space of time. When the natural resources begin to fail, when density of population increases, when there is no more adjacent, unoccupied, fertile territory to absorb, when the need for rapid multiplication becomes less urgent, when civilized methods have markedly reduced the death-rate and raised the general level of social culture, and, finally, when the supply of fresh and palatable food begins to pinch: then, what can any reasonable person expect but an inevitable fall in the birth-rate, coupled with a gradual decline in the rate of increase of the total population? It may be urged that emigration must then step in to solve the problem. But this is surely a very short-sighted view; since, for a consistent emigration to go on,

it is clearly necessary that there be an unlimited supply of suitable countries, with sparse populations of their own and appropriate climates, into which to migrate. And as such certainly do not exist without limit upon this circumscribed earth of ours, emigration, although an efficient agent at first in carrying off the surplus population, cannot always continue so to act, and a falling birth-rate must unavoidably appear, in the long run. (We are here, of course, always assuming that a low death-rate is regarded in the light of a thing eminently desirable.) Again, it may be said that food-stuffs and other requisites could be conveyed from a distance; but this, once more, in a world of limited extent and whose population is everywhere increasing, has its manifest restrictions. Also, it is surely a somewhat dangerous experiment to establish a large and increasing population mainly dependent upon supplies that have to be brought to it from distant places or from overseas. At some future date, when warfare is abolished for ever, such, perhaps, might seem more reasonable. But, under present international relationships, a country so circumstanced may, in time of war, quickly find itself totally *in extremis*.

Turning now to the statistics of falling birth-rates, we find the decline markedly exhibited in the older civilizations, where populations are densest, death-rates lowest, and social standards highest. And what else can one surely expect? Can any intelligent person expect the birth-rates of these now densely-packed countries to be equal to those which formerly existed in them when they were comparatively sparsely peopled, when their death-rates were very much higher, and when migration from them was not limited by law as it is to-day? (Witness the U.S.A. quota system, already described in the last chapter, on which latter account alone European birth-rates will probably experience a yet further fall). But even though birth-rates are falling in Europe, the total population is still steadily increasing year by year. Statistics, available to all, show these facts clearly.

In 1925, for England and Wales, the birth-rate was 18·3 per 1,000, the death-rate was 12·2 per 1,000 of the

population. In 1926 the birth-rate was 17·8, the death-rate 11·6. Fifteen years ago the birth-rate (England and Wales) was about 22, and the death-rate about 14. Sixty years ago the birth-rate was about 34, and the death-rate 22 per 1,000; but at that time the density of the population was only about one half of what it is to-day; also migration was much less complicated.

The following figures show the actual growth of the population of England and Wales from 1801 to the present time. It must, of course, be remembered that between 1911 and 1921 we lost nearly a million of our best men in the Great War; also that economic conditions were, and still are, profoundly disturbed by that calamitous event:—

<i>Year</i>	<i>Country</i>		<i>Total Population</i>
1801	England and Wales		8,892,536
1821	...	do. ...	12,000,236
1841	...	do. ...	15,914,148
1881	...	do. ...	25,974,439
1901	...	do. ...	32,527,843
1911	...	do. ...	36,070,492
1921	...	do. ...	37,885,241
1925	...	do. ...	38,890,000
1926	...	do. ...	39,067,000

Thus we see that, although our birth-rate is declining, as compared with birth-rates in the past, yet our numbers are still increasing and our death-rate is falling. The present density of population is for England about 701 per square mile; for England and Wales about 649. It will be noticed in the above table that between 1801 and 1901 our population nearly quadrupled itself. This increase occurred during a period of phenomenal prosperity, due largely to the exploitation of our coal and the control of the world's shipping, the which, of course, could not be expected to last indefinitely, our land base being so exceedingly small.

But let us not imagine that we are alone in a falling birth-rate. Statistics from the other European nations show exactly similar tendencies, as do those also from the United States of America. Indeed, it may be said

that a falling birth-rate, associated with a lower and declining death-rate, is one of the hall-marks of an advanced modern civilization.

From Germany come the following:—

<i>Years</i>		<i>Birth-rate per 1,000</i>		<i>Death-rate per 1,000</i>
1876-80	...	39.2	...	26.1
1910-13	...	28.5	...	16.0
1922-24	...	21.4	...	13.5
1927	...	18.3	...	12.0

The density of population in Germany is now about 334 to the square mile.

Statistics from France are interesting, exhibiting as they do a very gradual increase of population. But it must be borne in mind that the density of population in France was fairly high even so far back as 1801. Here are a few:—

<i>Year</i>		<i>Country</i>		<i>Total Population</i>
1801	...	France	...	27,349,003
1872	...	do.	...	36,102,921
1901	...	do.	...	38,961,945
1921	...	do.	...	39,209,666

The density of population is here now about 184. The birth-rate in France is 19.6. It is slightly higher than in England and Wales; but since the French death-rate is still a good deal higher than ours, the total population in France remains fairly stationary at present, exhibiting only a very slight degree of increase. The death-rate is now about 18 per 1,000.

Statistics from the United States of America show again a falling birth-rate, combined with a falling death-rate:—

<i>Year</i>		<i>Birth-rate per 1,000</i>		<i>Death-rate per 1,000</i>
1915	...	25.1	...	13.6
1917	...	24.7	...	14.3
1919	...	22.3	...	12.9
1921	...	24.3	...	11.6
1922)				
1923)	...	22.5	...	12.0
1924)				

Although the density of population in the U.S.A. is now only about 36—very small as compared with European standards—yet we observe that their birth-rate and death-rate are falling. Also, with a wise foresight for the future, they are already taking extensive precautions to safeguard their country from becoming overcrowded, and from the evils that attend such a state. They have already much restricted immigration. And who can conscientiously blame them for what really amounts to a reasonable care for the future welfare of their country and its now vast population? Certainly not the present writer.

To demonstrate that, in spite of falling birth-rates in Europe, its populations are still steadily increasing, we give the following statistics:—

<i>Country</i>	<i>Years</i>	<i>Populations</i>
Germany ...	{ 1905 ...	60,605,183
	{ 1925 ...	62,500,000
Italy ...	{ 1901 ...	32,475,253
	{ 1925 ...	42,113,606
Spain ...	{ 1900 ...	18,600,000
	{ 1924 ...	21,763,000
Sweden ...	{ 1905 ...	5,295,000
	{ 1925 ...	6,053,562
Norway ...	{ 1905 ...	2,311,000
	{ 1925 ...	2,772,414

In the case of Germany due allowance has to be made for the loss of territory as a result of the War.

In reference to the growth of some other populations of importance we give:—

<i>Country</i>	<i>Years</i>	<i>Populations</i>
Argentina ...	{ 1905 ...	6,000,000 (over)
	{ 1925 ...	10,087,000
Brazil ...	{ 1890 ...	14,000,000
	{ 1920 ...	30,600,000
China (proper)	{ 1905 ...	400,000,000 (over)
	{ recent ...	414,000,000 (about)

<i>Country</i>	<i>Years</i>	<i>Populations</i>
U. S. A. ...	{ 1900 ...	76,356,000
	{ 1910 ...	91,972,266
	{ 1920 ...	105,710,620
Egypt ...	{ 1897 ...	9,734,000
	{ 1917 ...	12,718,000

The population of Persia seems to have remained more or less stationary, at about 10-12 million, during the past thirty years. It is to be noted that the density of population in Argentina and Brazil is at present only about 10, in each, to the square mile.

Japan requires special mention. With a density of population of 400 to the square mile, and a total population in Japan proper of 59,736,704 (in 1925), she still maintains a high birth-rate (about 35 per 1,000), and continues to add yearly some 750,000 to her population. Should this rate of increase continue, mischief must ensue. But a higher degree of civilization in Japan is of comparatively recent date. Also it is most probable that a falling death-rate (it is now about 24), which is early to be expected with the introduction and action of the modern methods of preventive medicine, will correspondingly lower the birth-rate. Again, Dr. Ternoka (Report of the Institute for Science of Labour, Kurasiki, Japan, October, 1925) finds the birth-rate of Japan to be decreasing "due to the rationalizing of modern sexual life."

Returning to Europe and the falling death-rate there, we may quote (from the *Eugenics Review*, January, 1927) the following most interesting and instructive table of the expectation of life in London, drawn up by Dr. Raymond Pearl, John Hopkins University, U.S.A.:—

Period ...	1841-50	1851-60	1861-70	1871-80	1881-90
Males ...	34.6	36.4	35.7	38.0	40.1 years
Females...	38.3	40.4	39.9	42.4	42.4 ,,
Period ...	1891-1900	1901-10	1911-12	1920-22	
Males ...	41.2	47.2	49.5	53.8 years	
Females...	45.4	51.9	54.5	59.1 ,,	

These figures demonstrate that the average expectation

of life, for both sexes, has been greatly extended, especially since 1870, when the birth-rate began definitely to decline. Statistics given by the same authority for the United States show a similar tendency towards average longevity there.

As we have already said, individual life is a struggle with evil environment. It is, in fact, a continued strife between our natural inheritance and the inimical agencies that surround us; and in the end these latter triumph. But if we make sure of a first-rate natural inheritance (by following eugenic principles), and minimize the adverse agencies of environment (by preventive medicine), there is no reason whatever why the average expectation of individual life should not be much further extended. And a great deal of attention has recently been devoted to this most interesting subject. In an address read at the second session of the American Public Health Association at Buffalo, N.Y., October, 1926, Irving Fisher, Professor of Economics, Yale University, said (in regard to the question of lengthening human life): "But I believe the hundred-year limit is a bogey which can, and some day will, be beaten." Be this as it may, it is now a definitely established fact that the death-rate has been considerably reduced, and the average expectation of life much increased, during the past sixty years, both in this and in other civilized countries.

Now, when we review all these statistics, drawn from various sources and from many lands, certain cardinal points stand forth in clear-cut relief. We note similar tendencies under similar conditions appearing not in one country alone, but in many. We are led, therefore, to the conclusion that some great universal law is at work; that certain general occurrences are, in fact, not due to the vagaries of chance nor to human caprice, but are the manifestations of some such law, or laws. We observe, in countries which have been for a long time peopled, where the highest forms of civilization and the highest average standards of living obtain, where population is dense (as is the case with the leading nations of Europe),

that the birth-rate declines, that a greater degree of longevity is attained, and that the death-rate sinks. Furthermore, we are bound to realize that when these countries exhibited high birth-rates they presented then not only higher death-rates than at present, but were relatively much less densely populated in addition, and also their general standards of living were lower. Again, statistics show us that in less civilized countries (as in Japan, Soviet Russia, and Egypt) a high birth-rate in a fairly densely populated country is always associated with a correspondingly high rate of mortality and a low average of culture. Finally, in countries like Argentina and Brazil, we find a rapid increase of population is combined with large areas of sparsely-peopled lands, abundance of space and fresh food, and certain climatic conditions that are favourable. From all which considerations we are forced to the irresistible conclusion that the much-lamented fall in our birth-rate is, to a very great extent, of the nature of an *economic necessity*, corresponding to a high degree of civilization and culture, and all that these imply.

Emigration, as we have seen in Chapter IV, on the large scale is now beset with difficulties, and at best can only act as a palliative for an overcrowded population or populations. And even though an emigration could be so organized as to drain off the large surplus, constantly supplied by a high birth-rate, for a time, it could only be for a very limited period of time. Any broad and unbiased outlook upon the matter will reveal this clearly—our earth being strictly limited in extent, and having even now some 2,000,000,000 inhabitants. So it comes to this: If we *must* maintain a high birth-rate here in England and in Europe generally, one of two things must unavoidably happen. Either a miraculous supply of the more superior food-stuffs and all the other necessities of highly-civilized life must be quickly forthcoming, or our present death-rate must be increased by leaps and bounds by any of the “time-honoured” methods—infanticide, famine, pestilence, and especially by war, and war to the knife!

To prove clearly that the foregoing statements do not exaggerate the gravity of the case, let us glance at the results of a few simple calculations which anyone interested in the subject can readily make for himself. In round figures our present birth-rate for England and Wales is 18 per 1,000 and our death-rate 12. This means, of course, that, at an average, of every thousand of our total population eighteen are born and twelve die in the year. There is thus seen to be a difference of six between these figures. This six is said to be the natural rate of increase per thousand. Accordingly, in our population of roughly 40,000,000, the total increase in a year should amount to about 240,000 in round figures. (As stated by the Registrar-General, our total increase for 1926 actually was 241,102. During this year there were 694,897 births and 453,795 deaths in England and Wales.) Now there are few who quarrel openly with the lowness of our existing death-rate, so we will leave it as it stands (at 12); but we will suppose that our birth-rate per 1,000 once more approximates to what it was some 60-70 years ago—namely, 36 per 1,000. In this case the annual excess of births over deaths per 1,000 would be 24. Consequently, in one such year our total population would be increased by 960,000. In the next year the total increase would be about a million, and so on, increasing year by year, as long as our supposed rates remained constant. But to some of us at least it would seem that we have already about enough upon our hands to make room for our actual increase of population, which is about a quarter of a million per year. And, in view of employment difficulties (over a million being constantly on the dole!), labour unrest, and economic troubles, the disposal of a further 750,000 new arrivals per annum might certainly appear to present some rather awkward complications!—even assuming that the other European nations remained blissfully content with their present comparatively modest rates of increase, though now under the menace of our own rapid multiplication. But in fairness, surely, we must grant to them also the supposed boon of a birth-rate and

death-rate similar to our own—namely, 36 and 12 respectively. Accordingly, as the population of Europe is estimated at about 460,000,000, there would be an increase of 11,040,000 souls in one year to the already densely packed masses of this continent. And this annual increase would nearly equal in amount that calculated for the whole world at present (which is estimated at 12,500,000 per year)! Were such an increase actually to take place and continue, the horrible and unavoidable results must be at once apparent to any but the most hopeless bigot. But he would probably continue to inform us that even this vast surplus could easily be disposed of satisfactorily by emigration—quite forgetting or entirely ignoring all the difficulties attending modern emigration, which we have already alluded to; and, of course, taking no thought whatever for the welfare of future generations.

Obviously, then, we cannot have it both ways, as so many of our misguided advocates of a high birth-rate seem to suppose. We must bow, therefore, like sensible beings, to the inevitable, and not grumble, as children, who would eat their cake and keep it. A low birth-rate of itself with us to-day, instead of being a thing to be deplored and wept over, is thus seen to be, for the most part, an economic and humanitarian necessity.

But there is one grave and pressing evil of present population and modern civilization the remedy for which lies within our grasp, but which has received so far but scant attention. In this field there is a crying need for the united efforts of all true patriots and well-wishers of humanity. We would urgently direct the notice of high birth-rate enthusiasts not to the comparative lowness of the general birth-rate, but to its *character*. It is to what is known as the differential birth-rate that we would point, and reports show that the same evil is at work in all leading White civilizations. Here indeed is there fit cause for lamentation and a just indignation. Statistics prove that we are starving out our best stocks and recruiting our population from inferior types. Birth-rates are not equally low in all reaches of the community.

They are low among our most valuable citizens, but still high in the slums and among the poorest stocks. Both here and in Germany the family of the casual labourer and the like is seen to be more than twice and often nearly five times as large as that of a representative of the skilled and professional classes. It is stated (Prof. J. A. Thomson) that for a hundred couples among teachers and the clergy in this country barely one child on the average per couple of parents results; whereas for miners the average number of children is about 2·5 and for labourers 4·5. In London (1925) the birth-rate for Shoreditch was 24·5 per 1,000, for Chelsea 14·4, for Hampstead 12·2, for Westminster 10·7, and for the City 7·5. In short, the unfit are being encouraged to contaminate, overrun, and exterminate the fit! Here is a tendency, indeed, that leads inevitably to downfall and ruin. But, happily, it can be remedied without infringement of law, economic or humanitarian.

This is the pass we have come to. We have invoked science to reduce our death-rate and to prolong life, the which, coupled with a general increase of population, a high standard of living, and the impassable laws of world economics, have caused our birth-rate to fall. But we have not concerned ourselves with the *quality* of those born. But, surely, if a combination of forces—over some of which we have no control, and some of which could only be overcome by a lowering of the level of civilization, and by increased misery and bloodshed—compel us to a comparatively low general birth-rate, does it not become even more our bounden duty to ensure, by every humane and scientific means in our power, that those born shall be of the very best quality practicable?—and this in the interests alike of natural defence, hedonism, and the perpetuation of the advantages of White civilization throughout the world. Since there is now only room for a certain limited number per nation, and since the unfit citizen requires just as much of the essentials of civilization as the fit, is not our course of action for the future transparently clear? The population of this country is being increased by about a quarter of a million

a year by the birth of some 700,000 infants. Must we not unequivocally invoke science, justice, and common sense to our aid to provide that these be of the best nature possible?

Let us sum up very briefly. Owing to the interaction of the many causes already described, our general birth-rate is falling. But it is falling unequally among the various sections of the community. With the provident, the efficient, and the skilled classes the birth-rate is now exceedingly low, because their standard of life and living is very high, and because they must support not only themselves and such children as they can afford to produce, but are also compelled to contribute to the maintenance of huge and ever-increasing numbers of unfits and unproductives. Economic stress is at present forcing our most desirable citizens to limit their issue to such an extent that there is actually a danger of their dying out altogether. Indeed, so unfortunate is the existing state of affairs that were their birth-rate higher to-day their general standard of culture and living would inevitably be much lowered. And surely no one wishes for retrogression of this kind?

The improvident, the unfit, and the feeble-minded, on the other hand, still maintain high birth-rates, which would undoubtedly be higher even than they are were these degenerates not restrained (quite involuntarily) by excessive mutual pressure, some degree of shortage of food, and by lack of housing accommodation.

Obviously, then, all true patriots and humanitarians must agree that these latter should be compulsorily restricted, so that a reasonable increase of our better stocks may result. Since the earth is now clearly becoming crowded, and if we wish progressive culture to continue, a fairly low general birth-rate is a thing eminently to be desired. But surely we must see to it that it is the best who multiply, and not, as at present, the worst.

CHAPTER VI

Preventive Medicine and Eugenics

THE continued life of an organism is, broadly speaking, dependent upon two chief factors—its natural inheritance on the one hand, and its environment on the other. Each of these has been already defined in our Introduction. The natural inheritance of man comprises everything that is contained in the fertilized ovum, from which he develops, one half being derived from each parent. His environment consists of the sum-total of every influence (of whatever nature) with which he comes in contact, from the moment of fusion of the parental germ cells (which gives rise to the fertilized ovum) till the moment of his death. His individual life, therefore, extends from the instant of fertilization until his final decease. Consequently, his entire life-history may be divided into two parts, pre-natal and post-natal, during each of which phases he is continually subject to the action of environmental influences. In the former of these the influences are, of course, almost solely maternal—and hence the importance of the mother's state throughout this period of incubation.

Now, although the twin sciences of preventive medicine and eugenics should merge insensibly into each other, and should ever labour in unison, side by side, as philanthropic agencies, yet it may be broadly stated that the former concerns itself more especially with environment, the latter with natural inheritance. But, while each is working in its own more particular sphere of activity for the good of mankind, there need be no sharp line of separation between them. Nor, indeed, is such desirable. For a maximum amount of benefit to result it is essential that a feeling of unanimity of purpose and helpful co-operation be established and preserved. And bootless disputes as

to which is of the greater service to society merely waste time and energy, as well as tending to promote disruption in a scientific camp which urgently needs unity of effort, and to bring discredit upon each in the eyes of the general public. These closely-related sciences, therefore, should most emphatically join hands in good fellowship and take oath of brotherhood, realizing that united they constitute a vast power for good, but separated, or at variance, their values are much curtailed. Each is necessary to the other.

So far as the human organism is concerned the factors of environment may be divided into two main groups—those that are beneficial and those that are inimical. And it must be remembered that each of these may be pre-natal or post-natal. Speaking generally, the functions of preventive medicine are, on the one hand, to ensure that the individual has free access to all the beneficial agencies of environment; and, on the other, to assist him in avoiding those that are harmful, or to render such as he cannot entirely avoid less harmful to him, by suitable methods of combat. As examples of the former (beneficial agencies) we may cite: Pure, fresh air to breathe, food and drink of adequate quantity and quality, sunlight, space, shelter. As typifying inimical agencies we may mention: Microbes of infectious disease, overcrowding in houses and workshops, dangerous trades, extremes of heat and cold (to be guarded against by appropriate clothing, etc.), insanitary conditions generally. The practitioner of preventive medicine also exercises himself with the care of those about to propagate the species, with infant welfare, and so forth. His range of useful activities is thus seen to be a most comprehensive one, and there is no doubt whatever that he has effected much in recent times, especially during the last sixty years. Indeed, it is largely to his credit that the average expectation of human life has been so considerably extended—as a reference to Chapter V clearly shows. He has wrought wonders in reducing infant mortality, in improving workshop conditions and general sanitation, and in producing a fall in the death-rates from many

epidemic diseases. But, great though his value unequivocally is, his powers obviously have their limitations. He can only work upon the human material that is presented to him. He can help it to develop favourably and fully, such as it be, but he cannot alter or add to its essential nature. By no amount of favourable surroundings, nurture, nor the expenditure of wealth, for instance, can an imbecile be transmuted into a wise man. Nor, if the artistic faculty be lacking in the fertilized ovum, can any degree of subsequent teaching, æsthetic nurture and environment (pre- or post-natal) known to man produce the true artist. So also it is with the progeny of feeble and unsound stocks. By suitable (a sort of "cotton-wool," in fact!) environment, and at a great cost, they may be kept alive and fairly favourably developed up to their extreme limit; but this limit will always be a low one, and they will ever be liable to break down when subjected to a stress of less favourable conditions, which could readily be borne by the scion of a robust parentage. This being so, we cannot regard such persons, who if left to Nature must inevitably have been expunged, in any other light than as being potentially unfit. Furthermore, we must consider these unfortunates as constituting a continued menace to society, since by intermarriage they may not only perpetuate, but multiply the seeds of their disabilities. In short, we cannot really make a silk purse of materials obtained from the hog's ear!—we can only produce a semblance of the genuine article, which is in constant danger of giving way at the first severe strain. Neither can we add, subsequently, by the most carefully-planned environmental conditions, a single determinant to a fertilized ovum in which it was primarily lacking, though we can much aid the action of those already present.

Accordingly, we see clearly that preventive medicine may be of great benefit to humanity, when the material coming under its province is sound, or reasonably sound, from the outset (by its inheritance, in fact), but that its influence may be even a distinct danger when the material brought to it is hereditarily defective. For it tends to

preserve *all* life up to the reproductive age, and may thus favour the contamination of good stock by bad—fitness by unfitness. It is of the last importance, therefore, that preventive medicine be assisted in its good work by another philanthropic agency, whose office it is to ensure that the human material, passed on by it to preventive medicine, shall be of the very best quality attainable. This agency is now known by the name of Eugenics.

From the foregoing remarks it is manifest that, had the study and practice of eugenics *preceded* the application of the methods of preventive medicine, the human race would have undoubtedly been much more happily circumstanced than it is to-day. Unfortunately, such has not been the case; while preventive medicine has been in active operation for a fairly long period, the science of eugenics, in all its bearings, is still comparatively in its infancy, and its efficacy as a promoter of human well-being has not been as yet even widely appreciated, much less put into operation. As a result of this, and since these two agencies should at least have been called into requisition concurrently, our present problems of population have become much aggravated, though they are by no means insoluble.

What is Eugenics? In answer, let us first quote the definition propounded by Francis Galton, the originator of the term: "Eugenics is the study of agencies under social control that may improve or impair the racial qualities of future generations, either physically or mentally." This definition covers a wide field of activities, and certainly preventive medicine *may* be embraced within its scope. But while distinctly recognizing this, and thoroughly appreciating its indispensable value, eugenists, for the most part, consider that the practice of preventive medicine already reposes in eminently efficient hands, and accordingly confine their sphere of action more especially to the study of natural inheritance, and to the means whereby the results of such investigation may be applied with most benefit for the human species—to

improve human stock. As a result of their labours—to put the case broadly—they have discovered that, on the average, the offspring of parents possessing superior characteristics will also be superior in those same characteristics; and, conversely, that the descendants of inferior stocks will themselves again be correspondingly inferior. These facts have been established beyond any reasonable doubt. Consequently the chief aims of eugenics at present are: to promote an increase in the progeny of good sound stocks and to prevent the multiplication of those that are inferior—to advocate, in fact, the production of children *only* by parents each of whom is fit (mentally and physically), and each of whom is descended from sound stock upon *both* sides. The scientific basis for these views we have already presented in our Introduction when dealing with the mechanism of inheritance. The moral sanction is quickly to be found in the irrefragable truth that not only do we owe duties to those who now surround us, but have also very considerable obligations to perform in respect of those who are to take our places in the future here upon earth. And it would certainly appear to us that no real ethical or religious outlook could possibly ignore, much less attempt to evade, so clear a charge.

But it will be asked, Why should there be a need for an agency of this description? Why should eugenics be essential to continued progress in our modern societies? How comes it that Nature has not seen to it? The reply to these interrogations is: That we are not, as yet, completely civilized!

Startling though this assertion may appear to our modern attitude of self-satisfied and confident presumption, it is none the less true. Civilized in certain respects we may be; but in others we are quite the reverse. Modernized, rationalized, and scientific though we are in some things, in others we are yet in a Stone-age of prejudice, ignorance, and confusion. Consistent in outlook and action we emphatically are not! We are at present experiencing the inconveniences of that most unsatisfactory period which lies betwixt folly and wisdom, youth and maturity. In a word, we are still in a stage

of *transition*—between nature in a crude state and nature tempered by the genius of man. We realize our powers, intellectually, to combine the forces of nature for our benefit, but have thus far been too faint-hearted to apply them consistently to all things in practice. And, worse still, we have applied them to some but not to others, even when relating to one single subject. Hence most of our present difficulties have arisen—and, indeed, almost necessarily so. In regard to population questions we are still hampered by practices and superstitions which belong to an age that is past. We have thus brought upon ourselves perplexities which Nature, left to herself, would never have permitted. We have tampered with the law of Natural Selection, and have pressed preventive medicine into the task of preserving (and multiplying) those whom Nature would quickly have eliminated; and having preserved many of these, we know not now what to do with them! We have employed civilized, scientific methods in lengthening the average expectation of *all* life, in stamping out disease, and in increasing the food supply; but we have recklessly allowed wholly uncivilized and unscientific methods to regulate the procreation of new life. Here, essentially, lies the root of all our present troubles of population. We have, through science, partly interfered with the eliminating scalpel of natural selection, but have introduced no corresponding scientific instrument or substitute in its place. And until this is done nothing but mischief and confusion can possibly obtain. Obviously, then, we must be consistent—scientifically, humanely, and rationally consistent; and eugenic control must take the place of natural selection in weeding out the degenerate; not with cruelty and suffering, after they have become sentient, but by mercifully preventing their birth.

Variations from parental type, as we have already seen, occur—some good, some bad. Nature's method is to stamp out the bad and leave the good only to multiply. Man's method has been, of late, to preserve both, at the expense of the good. Consequently, to speak plainly, we are not only grossly over-populated in places, but future progress is seriously threatened by the undue multiplica-

tion of unsound stocks, and by our remaining good stocks becoming year by year more contaminated by inter-marriage with unfits. If this lamentable march is not checked in time, widespread racial deterioration, with inevitable decline in prowess, stares us in the face. It is to stem this devastating tide of degeneracy and misery that the science of eugenics must be invoked.

The question now arises, How is eugenic reform to be brought into effective operation?

Before answering this very pertinent inquiry it is necessary to repeat the existing state of affairs that so urgently needs this remedy. Very briefly it is this: Our valuable types of citizen are, mainly for economic reasons, showing unmistakable symptoms of restraining their fertility and becoming much less numerous. Meanwhile the unfit and the improvident, taking every advantage of present-day legislation, are multiplying to a most dangerous extent. This is only too evident, as an examination of Section 4 (Statistics of Unfitness) of our Introduction clearly exhibits. Consequently we must give our answer under two headings: firstly, methods of action and reforms calculated to favour an increase among the fit; secondly, methods to prevent the multiplication of the unfit.

Under the first heading will therefore appear:—

(1) *Reforms in Modes of Remuneration*.—It is obvious that, where wages are based upon the time worked only, the fit and efficient man, generally speaking, has little or no advantage over the unfit, the undesirable, and the inefficient; and accordingly his weekly earnings do not enable him to expend as much in his home and upon the upbringing of a family as his relative merit deserves. The results of this are, of course, unduly late marriages or small families in respect of the very people from whom a large progeny, the result of early marriage, would be particularly desirable and valuable. For these reasons the system of time-rate remuneration should, wherever possible, be abandoned, and a system of payment by results substituted. Wages, in effect, should in every case practicable be in accordance with individual merit;

they should be correlated with efficient output. Were this principle put into more extensive operation, an immediate stimulus to the earlier marriage and multiplication of the fit and efficient would be given.

Furthermore, in this connection the old system of promotion by seniority instead of according to merit is to be vigorously condemned. Under this enervating scheme of advancement efficient young men of marriageable age are suppressed and kept upon comparatively low rates of pay till, when well advanced in years, they succeed too late to better positions owing to the deaths or reluctant retirements of their seniors. The palpable evil effects of this upon population surely need only to be mentioned to be at once appreciated.

(2) *Reform in Present System of Income-Tax Allowance.*—If higher allowances were made in respect of children, there would result an encouragement to larger families in certain desirable sections of the community. Also, it has been suggested that a special bonus be given at the birth of each child of fit parents, or that stipends be proportionately raised.

(3) *Denunciation of Undue Family Limitation among the Fit.*—The application of continence and contraceptives by persons who are in all respects healthy and well-qualified for parentage, for selfish reasons alone, should be categorically condemned. It should be clearly realized that for such persons to unduly restrict their families is to act in direct opposition to the interests of their country and its future welfare. It is an important function of an enlightened public opinion to stigmatize and hinder all such unpatriotic selfishness that is brought to its notice. But though at present, no doubt, a good deal of undesirable restriction is being practised among our more valuable citizens, owing largely to economic stress, yet it seems almost certain that once this heavy strain is lightened (by a reduction of the amount of unfitness and its immense cost to the fit), Nature will reassert herself with renewed vigour, and a sound population will speedily blossom forth. With few exceptions, as we believe, the robust elements of population, if

disembarrassed, would generously respond to the urge of nature and their country's need.

Turning now to methods of action calculated to obstruct and prevent the multiplication of unfitness, we may mention :—

(1) *Reform in the Marriage Laws.*—At present almost anyone who has passed a certain absurdly low age limit, even one who is not held to be legally responsible in other respects, is allowed to marry and produce as many offspring as he pleases. It matters not whether the candidates be desirable or undesirable, fit or unfit, good or bad, strong or weak, provident or improvident, self-supporting or State-supported—all are eligible to perpetuate the species, to provide the material for the next generation, and their unions are hailed with rejoicing. Bigamy, however, is not tolerated, nor may a man marry his grandmother !

That radical reforms are urgently needed here, and especially since the total increase of population is necessarily becoming more limited year by year, must surely be apparent to anyone. The idea of a judicial investigation before every marriage is now purely Utopian, and may ever remain so. But it may act as a beacon indicating the direction in which we should strive to advance. It is suggested, therefore, that a *right* to marry and reproduce the race should be established by each individual previous to any such contract being recognized. Certificates (medical and other) proving fitness, desirability (by personal and family records), competence to support a family, heredity (by family records for two generations), and absence of certain diseases, should be produced by each party before marriage can be legalized. Severe penalties should be enforced where fraud is perpetrated.

It is now required by law that those who enter a country from without, as immigrants, shall conform to certain high standards of physical and mental fitness, or be rejected. This being so, it might well be asked, regarding those to be born *within* the State, who are to enter upon the serious duties of citizenship, Why should

we here admit any defective type whatsoever merely to gratify the passing lust of the improvident, the imbecile, and the undesirable? Why, indeed?

(2) *Segregation*.—This is to-day, of course, being practised (though for reasons other than eugenic) in regard to certain cases of the most obviously unfit—the insane and mentally defective. Some authorities recommend its much further extension, even to embrace hopeless and improvident unemployables who have been supported solely by the public funds for long periods of time, also incorrigible drunkards and habitual criminals who are still potential parents but refuse to undergo sterilization. All these suggestions seem to merit a careful consideration.

(3) *Sterilization*.¹—This might be practised with great benefit (upon either sex), with the individual's consent, instead of segregation, in those cases in which segregation would otherwise be deemed necessary only on account of the danger of procreation. It should be of great value in the milder forms of insanity and feeble-mindedness, and particularly to counteract the peril of the further dissemination of mental disability by persons subject to intermittent attacks of insanity, who are frequently being discharged from asylums as temporarily cured. But it is, of course, eminently suitable as a prophylactic for all persons suffering from a definitely transmissible defect of whatever nature. Their consent should be obtained in all cases, except in certain mental disabilities, where the consent of parents or guardians should suffice. But the State might well be authorized to bring a certain amount of pressure to bear where it is considered that consent is being unreasonably withheld.

It may be of interest here to note that in the United States of America sterilization has been already performed for eugenic purposes. In California State institutions for the insane and feeble-minded, up to June 30, 1926, 3,166 males and 1,827 females had been

¹ In the case of males the operation (vasectomy) is quite trivial, and can be performed under a local anæsthetic. Its only effect upon the patient is to prevent procreation.

sterilized.¹ (These figures are quoted from the *Eugenics Review*, October, 1926.)

Another most important fact is the following: The Supreme Court of the U.S.A. has recently passed a decision upholding the Virginia Statute providing for the sterilization of mental defectives (*Eugenics Review*, October, 1927).

(4) *Reforms in Relation to State Relief*.—It should be clearly understood that no person on account of poverty alone is entitled by *right* to the receipt of State relief, and that those who receive it—certainly for extended periods—must be expected to conform in their conduct to certain reasonable, State-imposed regulations. Accordingly, they must agree to be sterilized if such be thought desirable for the national good, or the relief must be discontinued. By such reforms a great deal of the improvident multiplication of unfitness might quickly be checked.

(5) *Conception Control*.—All the very poor should have free access to skilled advice regarding the best and least harmful methods of birth control, the use and choice of contraceptives, etc. Birth-control clinics should be established, especially in every large slum, for this purpose, and great care should be exercised to ensure that only the right people make use of these places. It is to those suffering from hereditarily transmissible defects, and to those who cannot possibly raise a family in accordance with the lowest standards of civilization, that such methods are particularly valuable. It goes without saying, of course, that if the better types of population make use of the methods of birth control, and the inferior and totally reckless continue to multiply, a greater evil than ever would result. Every precaution must therefore be taken to safeguard against such a contingency, and to promote the use of contraceptives, as far as possible, only among the most suitable and deserving cases.

¹ On January 1, 1928, the total number already sterilized in the U.S.A. was 8,515 (*Eugenical News*, September, 1928).

But it is of little avail to preach new legislation and other reforms till the general public thoroughly appreciate the gravity of the questions at issue, and the seriousness of the danger from racial degeneracy that looms so menacingly not only over this country, but over the whole length and breadth of White civilization. Once these things are brought home to the masses by EDUCATION, propaganda, the press, the pulpit, and the film, there is little doubt that the more intelligent will quickly rally round the allied standard of eugenic reform and preventive medicine. Furthermore, a strong and wide-spreading public opinion in favour of a sound natural inheritance—a eugenics conscience, in fact—thus established, appropriate legislation, upon the lines we have indicated, will speedily spring into being. And a public opinion, once aroused in a just cause, can rapidly effect vast changes. History gives us many an instance of sacrifice, heroic endeavour, and stupendous achievement, brought about through the wide dissemination of an idea—an ideal. And here, staring us in the face, if we would but realize it, is surely such an one—our duty to posterity.

It must come to be recognized that there are other desirable forms of inheritance besides the inheriting of riches: that the greatest blessing which a man can receive from his forebears is the knowledge that he is descended from a sound and unblemished stock. Were the masses to fully comprehend this great truth, the possession of a good natural inheritance would immediately take its true place among the values, and would carry with it a just pride in ancestry. A new cult would thus emerge, and an honest rivalry be engendered.

Now, there is not one among us who remains, throughout life, unfamiliar with the immense power for restraint of public opinion. Each one of us in every grade of society, to some extent, and generally more than he is willing to admit, is controlled in his actions, both public and private, not only by the recognized laws of the land, but by the consensus of the opinions of those who surround him—by the unwritten law of society. Each goes daily in dread of his neighbours' disapproval, and the

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conduct of all is modified accordingly. In our present emergency, therefore, it is upon the concentration of public opinion in a right direction, and upon its potency to produce reform, that we must chiefly rely. On the one hand, it will see to it that fitness is acclaimed an honourable attainment, is plentifully forthcoming, and does not shirk its obligations; but, on the other, it will loathe and reprobate the perpetuation of suffering and degeneracy, and will not hesitate to punish the delinquent.

CHAPTER VII

Education—Scientific versus Classical

IT is no slight task to disembarass the mind of prejudices and traditional methods of thought which have been insidiously instilled in the course of very early training and education. Indeed, so intimately blended do some of these become with the very substance of mind that, in later life, they are not infrequently mistaken for inherent, essential instincts—for truths inborn, rather than for doctrines subtly infused (and so acquired), as they really are. For this reason it generally requires a mighty effort of analysis and introspection to enable a man subsequently to distinguish between that which is truly innate in his being and that which has been artificially engrafted; the which important fact has been fully appreciated and utilized for their purposes by not a few cults, religious and other, during the passage of history. When the train is laid in youth it is laid profoundly; and seeds of whatever nature, once implanted securely in this virgin soil, are prone to take deep roothold, not likely to be torn out save by the vastest upheavals, their tendency being rather to sprout into stately growths of value or the stubborn weeds of bigotry. Indeed, there can be little doubt that the most merciless stumbling-block in the path of progressive enlightenment among the masses has ever had its foundation in the sedulous perpetuation, from generation to generation, of obsolete traditions and prejudices which have lingered and been preserved in a misguided system of early teaching, long after they have been consigned to the limbo of myth and fallacy by those of a more vigorous and searching intelligence. On this account it might not unreasonably be expected that we should begin at least by imparting to the young only such truths as were firmly established, avoid-

ing scrupulously the cloudy regions of doubt and controversy ; and, further, that our choice of subjects would be guided, as far as possible, by their natural degrees of interest and practical value, so that, in this way, we might not only ensure an intelligent co-operation between teacher and pupil, but, by combining interest with utility, facilitate, minimize, and recompense the labours of each.

Bearing these things in mind it behoves us now to marshal in review the standard elements of present-day early teaching and education for the purpose of comparing them with those of more ancient times. We shall thus be the more able to study the march of ideas as inculcated into the minds of the youth at various periods. When this has been done one cannot fail to be startled at observing how singularly little is the change during the past two thousand years ! Despite the many advances in scientific knowledge ; despite the proved value of the scientific method of inquiry, of observation, of induction, of deduction, and of verification ; despite the acquisition of multitudes of interesting and vitally-important truths recently brought to light through these agencies—despite all these, we find that, especially in our “higher” educational establishments, the self-same subjects which were given prominence in the training of our forefathers hundreds of years ago are still being given a similar degree of prominence to-day ; also we notice that instruction is carried on in these dull old subjects in very much the same dull old way as of yore. Advance in knowledge, in *method*, and in breadth of outlook, is to a remarkable extent ignored.

It is an old way of dismissing a disconcerting inquiry to reply that, What was good enough for our fathers and great-grandfathers should be good enough for us. This kind of peremptory answer, though once, perhaps, to some extent efficacious, can scarcely be expected to suffice to-day. For we have to remember that beliefs that are old are not necessarily sound ; they may be old and sound, or, perchance, they may be old and unsound. Antiquity does not, of itself alone, warrant an unimpeachable integrity. We recognize now, therefore, that

there are not only good old things and good old institutions, but, unfortunately, bad old things and bad, wrong-headed old institutions in addition. To take a single illustration of the latter. Not so very long ago the vast bulk of our forefathers, reinforced by the then authorities and led on by the full sanction of the Church, were firmly convinced that this little earth of ours was the central figure of all things, the whole universe included; and that the sun revolved dutifully around our planet, day by day, entirely and solely for our advantage and delight. (The stars, of course, were of a similarly accommodating nature.) Not only did they hold stubbornly to this opinion themselves, but were prepared to burn at the stake, or torture, the living body of any person who entertained a different view—that, peradventure, the earth (though generally regarded as so absolutely immobile) might once in a while take a turn upon its own axis, or even, on occasion, be so frivolous in its demeanour as to go upon a complete journey around the sun! The terrible experiences of the great scientist Galileo, only three hundred years ago, are very relevant reminders of the amazing extremes to which supposedly sensible people may be led as a result of foolish adherence to a bigoted ignorance—to bad, old, wrong-headed ideas, in fact. And many a valuable lesson, as it seems to us, may well be learned regarding our own present and future outlook upon things, from the study of such examples as these drawn from the past history of human assurance, misplaced.

In view of all these considerations, and although it may seem to some little short of sacrilege even to raise up doubts upon such a question—akin to rudely stirring the ashes of the departed—we feel compelled to point a denouncing finger at the ancient, time-honoured, but too exclusive, system of classical education (and much that goes with it), and to prophesy that its days of unassailed monopoly are numbered. For a certain cast of mind, and for the specialist in ancient literature, no doubt such a study is admirable; but for the vast majority of average persons in any section of society the very briefest acquaintance with the dead languages is surely all that

is necessary. Human life is much too short for such studies in any detail (the specialist always, of course, excluded). The careful examination of a few root-words in these defunct tongues, coupled with a rough understanding of their constructions, should certainly suffice for the generality of people; and those who wish to familiarize themselves with the philosophy of the ancients can now most readily and inexpensively do so, by obtaining in their own language excellent translations from the originals accomplished by experts of the highest merit. But since the average expectation of human life is only some fifty odd years, and as this period is much too brief to acquire even a slight acquaintance with the many subjects of vital importance and special interest that surround us, it would certainly appear to an impartial observer to be an act of extreme folly to devote by far the greater part of the working hours of each day of each person for some eleven years to the minute study of languages which have long since ceased to be spoken. Moreover, let it be remembered that these years are the most impressionable in the individual's whole life, suitable knowledge being then more easily absorbed and retained than at any other period. And what is the result of it all in the vast majority of cases? Of one hundred boys, taken at random, who went to school at six and left at sixteen or seventeen years old, how many can be said to have attained to proficiency in the classics? How many of them can speak any one of the classical languages with even a tolerable fluency? How many have attained to any sort of mastery over these subjects—after eleven long years of application? How many are intimately familiar with the philosophy of the great writers whose works they have construed, or attempted to construe? But whatever the pupil failed to acquire in classical lore, one cogent fact at least emerges. It is: that so dampening and depressing is this excessive study of the ancient tongues to the great majority of those submitted to it, that many of them gain thereby, instead of a love of learning, a profound hatred for it in any form, which frequently accompanies them to the grave.

This kind of thing clearly affords an interesting illustration of a remnant of the past which has survived and been perpetuated almost by force, and in spite of protest, into an age that long ago ceased to appreciate or require it. Our average preparatory or public schoolboy, indeed, might still (while at school) certainly conclude that Latin and Greek were the only things of real importance in the world; and great would be the shock—were he not used to inconsistencies from birth—on leaving behind his places of instruction to discover the exceedingly small part played by the classics in the lives of his parents and of adults generally, and how rarely such topics were seriously alluded to, even remotely, in ordinary polite society. He might well be startled to note that the conversations around him embraced, for the most part, a very different class of subjects—to wit, the principles and practice of money-making, advertising, horse-racing, golfing, and jazzing, interspersed with reflections (illuminating and other) upon the varied mechanisms, internal and external, of the motor-car. While he would be dismayed to observe that the generality of adults, when to “literature” disposed, far from turning for edification and enlightenment to the Dialogues of Plato or the oratory of Cicero, seem deliberately to prefer a species of papers and books whose subject-matter mainly concerns itself with notorious scandals, divorce-court proceedings, and illicit dallies in the pastures of love!

The speed, and even assiduity, with which most people forget the vast bulk of their classical learning must be remarked upon, showing us as it does that much of it was never really absorbed by the mind. But the benumbing influence of the system remains. After many years of partial endeavour, no sort of mastery over these dull subjects is usually attained, a state of affairs which, being essentially unfortunate and depressing to the budding intelligence, is calculated to engender—often quite erroneously—a lack of faith in its powers. Hour upon hour of pen-gnawing and gloom, in a stuffy and uninspiring atmosphere, presided over by a stereotyped, dry-as-dust instructor, are remembered. Worst of all, moreover, the

liking for subsequent intellectual inquiry being thus in many cases stultified at the outset, the individual, once freed from school restrictions, tends almost necessarily to swing to an opposite extreme; and, thrusting aside for ever the studies that have always failed to satisfy or attract him, plunges at once and too exclusively into the class of literature and pursuits we have already indicated. Few indeed are those who afterwards return to a serious, prolonged, and comprehensive examination of any difficult subject whatsoever, save with the confident expectation of an early monetary recompense for their labour.

Natural feelings and antipathies should ever receive a most careful consideration before being dismissed as follies. Although many of them have now to be modified under the reign of advanced civilization, yet close inquiry should always be made concerning their general character, since often they point in a right direction. Thus a hungry man, whose natural feelings prompted him to have recourse to beef and bread, if condemned instead to a diet of rhubarb-root and ipecacuanha could scarcely be expected to thrive in bodily health. So also with the mind. If it be fed, wherever possible, with the food it craves it will seize upon it with avidity, absorb and assimilate it with a surprising readiness, and expand to the very best of its inherent capacity—always wishful for more. If, on the contrary, natural aptitude being disregarded, an unsuitable and unpalatable diet be forced upon it, a mental nausea is the unavoidable result. The almost instinctive abhorrence for the study of Latin and Greek syntax, therefore, exhibited by nearly every healthy young person, should not be ruthlessly ignored. An endeavour should be made in each individual case to determine the natural bent of the mind, so that the rude old method of inculcating knowledge by physical violence (almost, in fact, with hammer and chisel!) may be superseded by the far more rational one of introducing it through the genial medium of the intelligence.

Nearly all young persons are at first potential naturalists. This is clearly evidenced by the general type of question they are for ever putting to the adults who

surround them, and by their common love of collecting, comparing, and roughly classifying natural objects of some description. And here, surely, lies the key to the problem of early education. Need we seek further? Why do we not encourage and extend by suitable methods these inborn needs and desires? Why do we not respond intelligently to the demands of nature when such are harmless? Why, observing these things, do we still cling to bad old systems and methods which totally ignore them? Why, indeed?—save that many of us are yet under the sway of ancestral prejudice and superstition.

Almost from being able to articulate young people are perpetually searching for information about the big things of this world and of life. They seek instruction about the sun, the stars, the earth, the clouds, whence man came, whither he goes; and their teeming queries embrace a multitude of subjects of vast range and absorbing interest. They are ever striving to understand the mechanisms, structures, and relations of the things around them. Are these natural propensities always to go unheeded? Are we to feed with the stone when the loaf is so clearly indicated? Are we to continue to answer their eager questions by thrusting into their unwilling hands dismal treatises on Greek irregular verbs and the like stupefying substitutes? Are we to continue to send them forth into the world utterly ignorant of almost everything for which they should have been prepared?—with no knowledge of the laws of the land in which they dwell; no knowledge even of their own bodies or the functions of their various organs; no acquaintance with the discoveries of science, old or new; no rational conception of the history of the earth upon which they live, its population and relations in the universe of which it is a part; and with no real and sound basis to sustain them in wrestling with the perplexities of sex? Are they, in short, to receive no training whatever that may help them to combat successfully the varied exigencies of practical life?

From all these reflections and considerations one can scarcely doubt the nature of the subjects that should

certainly form the basis of all education, and the lines upon which instruction should be given, for *all* classes of society. Among necessary changes, and foremost perhaps of these, the prominent place assigned to the dead languages must be given up to the study of the biological sciences. In *every* grade of education room must be made in the curriculum for the teaching of these subjects, both on account of their surpassing interest and value to the mind, and also because of their tremendous importance to the race. Instruction, starting at an early age, should be given in the general structure of plants and animals; in the make-up of man and his various functions, physical and mental; in evolution and in natural inheritance; and in world population. In short, the object of this study should be to interest the pupil and make him realize the whole world about him—animate and inanimate, his relation to it, the part he plays in it, and his personal responsibilities as a link in a mighty chain. Thus will he quickly acquire a breadth of outlook, a facility for generalization, a scientific *way* of looking at things, at values, and at evidence, which cannot fail to prove a priceless possession to him throughout his entire life, and which could never be even approximately reached by any amount of application to the classics alone. Moreover, emerging from his school life with a solid foundation of biological knowledge, he will be splendidly prepared to assimilate further essential instruction concerning the healthy relations of the sexes; which instruction, begun at school, can then be quickly, easily, and without prejudicial reserve, completed by the intelligent parent. In this way a sound knowledge acquired in youth, when the mind naturally craves for such information more perhaps than at any other period, can readily be absorbed and fixed throughout life—never to be forgotten, always to hand, and capable of being applied to any emergency that may arise. Indeed, of such paramount importance does this type of education seem to us that it is extremely difficult to conceive how anyone can possibly arrive at a true, just, and comprehensive conclusion upon almost any subject, philanthropic, social,

economic, political, or philosophic, lacking so essential an aid. Furthermore, scientific learning and inquiry tend not to die with the school days, but to be extended and enlarged throughout the whole subsequent period. They bear upon all things that surround the individual and with which he comes in daily contact, thus teeming with new interest continually. Also, much of this education being conducted by practical visual experiment and demonstration, in addition to theory, the student becomes familiarized equally with each; the which being of no slight advantage to him in after life.

But it is useless to suggest a reconstruction of education while preliminary examinations are still conducted upon the old lines. These, therefore, must also receive due attention, and biological subjects must be included in the curricula. Furthermore, it must be remembered that the cost of education is exceedingly high to-day for the children of professional and middle-class parents. Every endeavour should be made to bring about its early reduction, since, for this reason, there is a strong tendency to unduly limit the average family among these most necessary members of society. To educate one son, at the present rates, at preparatory and public schools undoubtedly costs the hard-working parent quite as much as the upbringing of two would do upon a more rational system. Accordingly, human nature being what it is, where two healthy and valuable children might well have been reared, the family is restricted to one. There is thus seen to be an urgent demand for a much cheaper, though adequate, education for these classes. And State schemes to provide education for *all* might well be seriously considered. Were such a comprehensive system to be put into operation the cause of a great deal of present-day grumbling and ill-feeling in reference to "paying for the education of other people" would be removed.

Reviewing the early training and education of all classes throughout the land, it cannot be denied that a light is slowly dawning here and there; that a need for a different type of instruction is being realized; that individual psychology is receiving attention. But the

classical pall yet abides in many a stronghold of prejudice, tardy to lift; and parents, though beginning to doubt, still continue to condemn the bright young minds of their offspring to its enervating influence. Fashions and old opinions, however ridiculous, are slow to be abandoned; so hardly-won earnings are thus still expended with little return. Nor have we far to look for convincing evidence in support of this statement; for it is no uncommon thing to find parents subsequently employing special tutors to prepare their sons for examinations which embrace the very subjects in which they were supposed to have become proficient while at school. We are all familiar with these striking anomalies.

In view of all the reasons here adduced it would seem evident that, if we wish to produce the desirable, enlightened type of citizen, all must have access, at moderate economic rates, to a scientific form of education; and each person must receive a certain amount of instruction in the principles of biology. Were this kind of knowledge once disseminated throughout the community, and indeed the world, population problems would soon be regarded in a very different light; confused methods of thought would be at an end; and solutions which now appear almost absurd to the uninstructed would be rendered apparent and justifiable to all. The great evils of unintelligent overcrowding would be self-evident, and the way would thus be paved towards the sane and proper method of ensuring the peace of the world, as a whole, by a rational limitation of its fit human population.

Until this be accomplished no true state of civilization has been reached. It is the noble function of an enlightened education, and of those who preside over it, to secure this inestimable blessing. To education, then, we must look.

CHAPTER VIII

World Population Control

THE difficult problems which confront us under the heading of "World Population Control," although perhaps of more urgent concern for the future—when eugenic reform has been in actual operation on a wide scale, and when better international relationships and understandings have been established—may yet be passed in review at this point; since the earlier the necessity for the serious study and solution of these questions be recognized, the greater should be our preparedness to meet them. Also Eugenic Reform, Preventive Medicine, and World Population Control—the three great agencies of scientific philanthropy—must ultimately work together, hand-in-hand, each being necessary to the others.

We have already seen how very essential it is to educate the masses, throughout all grades of society, in the rudiments, at least, of the biological sciences; and reasons have been given for the commencement of this instruction at an early age. All members, in fact, of a nation which claims to be civilized should be familiar with the broad principles of the sciences relating to life, evolution, and natural inheritance. We have further noted that, without a general knowledge of such subjects, it is useless to expect an intelligent understanding or active co-operation among the population at large in any scheme, or schemes, for promoting racial improvement, or for stemming the evil tide of deterioration that threatens us to-day. Also, we have indicated the various channels through which these studies are to reach the people of a nation—school, press, pulpit, and film, and especially school. But if we persist in neglecting these subjects of early training, and allow such equivocal teachings as "increase and multiply without limit or forethought" to

be broadcasted, we must resign ourselves to a continuance, even aggravation, of our present perplexities—economic stress, warfare, and the misfortunes of overcrowding generally. But if our masses are instructed, during the impressionable years of youth, that to increase and multiply without intelligent restraint is grossly wrong, immoral, and, indeed, irreligious; that they have, in fact, duties not only to those who are now upon earth, but also to the progeny whom they destine to follow after; and if the reasons for these things are clearly presented to their minds, based upon well-established biological truths, then, and then only, can we expect with confidence the generation of a sane and just public opinion touching these matters; though once this is formed laws and actual achievement will follow, quickly and inevitably.

Having thus attained to the secure founding and operation of the principles and practice of eugenics and preventive medicine, we are now led to the further most important stages of world-wide stock-taking, enumeration, and the consideration of the future control of the population of the world as a whole. For, however vast and almost infinite the earth and its resources may have appeared to our forebears, we are now conscious that each has very definite limitations. In a sense—if we be permitted to use such a method of expression—our earth has become very much smaller in extent during the past 150 years. With the introduction of steam power (and all that has sprung from it) into human affairs, great and rapid changes have been brought about. Indeed, the danger would seem to be lest modern man should be unable to keep pace in his own development, physical and mental; and that he be completely overwhelmed by his inventions!—so amazingly rapid has been their acquisition. New methods of transport have entirely modified the old perspective of things; they have much complicated the problems of population, and permitted the occurrence of heaped-up masses of humanity at certain centres, supported very largely by food and other necessities brought to them from vast distances—things quite impossible a century and a-half ago. A journey

that used to take several months, with much uncertainty, can now be readily performed in a week, with nearly complete certainty. Our outlook, therefore, upon the world must be correspondingly narrowed down and concentrated. Whereas, in the times of our forefathers, nations could often be looked upon as being divided from each other by wide and almost impassable gaps, with separate interests, now, owing to our rapid means of communication and transport, these gaps have become considerably abridged. Whereas it was once sufficient for clans and tribes to combine for the common good, now it is necessary that nations, and groups of nations, should unite for this purpose; they can, with safety, no longer remain isolated in their individual interests from the common interest of humanity at large. We are all, so to speak, being drawn nearer, and ever nearer, together. And until this is more widely appreciated white civilization is in peril of extinguishing itself through narrow, mean-spirited jealousy, petty strife, and a lack of that coherent unity of outlook and purpose which is now essential alike to its safety and to its continued prosperity. The white races must therefore realize that their interests are common ones, that their futures are bound up in each other, and that they must co-operate—or perish. In short, there must be no more repetitions of the devastating experiences of the recent Great War, or white civilization, as we know it, may be doomed. Every individual must be brought to recognize his personal responsibility as part of a great machine; and an enlightened education, from youth upwards, should see to it that this is effected.

Now, whatever other causes be set down as productive of warfare between the nations, it is surely an incontrovertible proposition that, if the nations be peopled up to (or even near to) the food supply of the earth, fighting must result. Human nature being constituted as it is, this climax is inevitable. The population of the earth is at present some 2,000,000,000 individuals, of whom in every three, at an average, about two are coloured and one is white. The average density of population per

square mile is now roughly nearly forty—actual density varying, approximately, from zero at the poles to 701 persons to the square mile in England. As already stated in our Introduction, it is estimated by reliable authority that there is annually an average total world increase of something like 12,500,000. Accordingly, it becomes perfectly obvious that, since the earth's maximum fertility is strictly limited, if population be allowed to keep on increasing at its present rate a time must be reached, sooner or later, when it will support no additional inhabitants. Extermination by violence then immediately supervenes.

There seems little doubt that with the cultivation of certain areas which still remain sparsely peopled a greater population than at present exists could be sustained. But the very relevant questions to all thinkers must arise: Are we to permit a reckless increase right up to the possible limit of food supply before attempting any restraint? Or, Is it not a wiser course to at once take stock and impose a tentative check, thus leaving a little in reserve for the unknown emergencies of our future generations? By the latter method we should be enabled to gradually introduce a reasonable restriction upon increase, and so gradually become accustomed to its operation. Whereas, if we continue to populate the earth right up to its limit before applying a salutary and prophylactic restraint we shall all the while be exposed to wars and famines at certain points where populations have unduly accumulated, and, in the end, no experience in the control of reproduction having been previously obtained, the position of *all* would certainly be a very equivocal one—to put the case mildly—with warfare, famine, and misery staring each overcrowded nation in the face. Moreover, as the natural mineral resources of the earth are by no means infinite, if we have any conscientious regard for the welfare of our descendants, these former should surely be everywhere most carefully husbanded, and not flung away in foolish wars. For such things, it must be remembered, are irreplaceable; once used up, many of them cannot be restored by man. A

certain quantity of them exists upon this globe, but this quantity is strictly limited. In a few hundred years, for instance, we can demolish all the coal that has taken millions of years to form. The utmost economy of coal, oil, iron, and such like is therefore imperative; their wanton destruction in warfare would seem little less than an act of madness or the uncalculating folly of childhood. A fully populated world, subjected to an increasing shortage of fuel, would obviously present rather an appalling spectacle! Yet to such, it would seem, we are tending. It is indeed terrible to contemplate the immense wastage of irreplaceable material and liberated energy which occurred during the recent Great War. Coal, oil, chemical substances, etc., of all kinds, which unfortunately cannot be "regrown" in any reasonable period, all shamelessly expended, their vital energy extracted and transformed—and for what? For the destruction of good men and yet more material!

Manifestly, if we are to safeguard our sound human stocks and irreplaceable materials, we must have no more wars of this sort; otherwise white civilization will soon become totally bankrupt in both—utterly ruined, and an easy prey to the more barbarous invader. So would the clock be once again put back; and, after a chaos of some thousand dark years of decline and stagnation, another attempt at regeneration and progressive struggle would arise. To prevent so retrograde a step it is clear that the peoples of the earth must combine for peace. Devastating war must be avoided. And, if we wish to maintain a white civilization, the white races must lay aside their foolish quarrels, rise above their racial hatreds (which largely emanate from a misguided early training), and unite together for the common good of all.

At the close of the Great War especially, and ever since that event, there has been clear evidence that the urgent need for some such unity of outlook and action has been apprehended by large numbers of thoughtful persons of all nationalities. When the horrors of the War were yet fresh in their minds, a vast amount of energy was expended in this direction by all sorts of people, and

a multitude of schemes were propounded. Let us take warning to-day that conditions have not materially changed, though the memories of many may be dulled. The need is still as pressing as ever—even more so.

The League of Nations has certainly been called into existence, exhibiting, as it does, a tentative step in the right direction. But surely it is indispensable that it have a more substantial foundation than mere words upon which to erect its lofty superstructure. For of what avail is it for the nations to meet in solemn conclave, to discuss propositions for a world-wide peace upon a basis of promises and disarmament, so long as a totally unchecked and daily-increasing number of mouths are crying out for the essentials of life itself? Must we not rather come to grips with fundamentals than palter with incidental details? Why do we waste our energies upon symptoms when their causes are known and stare us in the face, awaiting to be attacked? Would the wise man clip at the foul excrescences of a fungus when its root-place is exposed to view? Manifestly, then, we must seek for our remedy deep down beneath the mere surface of things. The earliest records from the Stone Age show us plainly that armaments of some description are almost as naturally the outgrowths of men engaged in sharp strife for food and the other necessities of life, as are his nails, teeth, and other appendages. Consequently, to restrain armaments we must reduce the cause for them—namely, the stress of competition; and to achieve this end, since we clearly cannot increase without limit the supplies of nourishment and all the many essentials of high civilization, we must perforce limit the number of men produced. And here, in this policy, lies the solution of the problem. Its wisdom and humanity appear self-evident. It is founded not upon the vacillating sands of sentimental impulse, but upon the solid rock of reason and of science.

To attempt to deal with the matter in any other way, and hope for success, would seem to be to act without an appropriate knowledge of the basic characteristics of human nature or the principles of economics. One might

just as reasonably breed waterfowl, and complain afterwards of the number of webbed feet and beaks!—or porcupines, and grumble querulously at the disadvantages attending the production of so many spines! Man and armaments go together, progressively, side by side; and, if competition grow beyond a certain degree of acuteness, he will not hesitate to use them. Clearly, then, if we would have peace and progress, we must establish a system of world population control; and the earlier the preliminary steps and observations are instituted, the better will it be for us all. Conferences of scientists, economists, and statesmen, authorized by their respective Governments, must meet frequently upon neutral ground to investigate these problems. The number of persons whom the earth can reasonably support with the essentials of civilized life must be, as definitely as possible, determined. The effects of the operation of eugenic reform and preventive medicine should be calculated. Estimates must be made showing roughly what each nation's population may extend to, and at what figure it should be kept, so that dangerous overcrowding may not result. Some degree of competition (within and without) must be maintained as being necessary to continued progress, but it must be arrived at by the most careful consideration and collaboration of all concerned. The ideal aimed at must ever be to preserve just such a degree of population that, while a healthy state of rivalry is kept up, it is not so severe that revolutions and wars become unavoidable. Experience would quickly lead to the discovery of this happy mean of population—betwixt enervating inertia on the one hand, and bloody strife on the other. And once firmly established, and its merits intelligently appreciated, its further maintenance would not present nearly so serious a difficulty as might at first appear, since enlightened education and eugenic reform would have previously prepared the way.

Restrictions have already been imposed upon immigrants entering a country from without; the time has now arrived for limiting those born within its confines also—firstly, in respect of quality; finally, in respect of

quantity. A quota system (similar to that introduced by the U.S.A. for immigrants) must be established, stating clearly, within reasonable limits, about how many births may take place yearly in each nation. And these allowances should be posted in conspicuous places, or published officially at frequent intervals, for the information of every citizen. The national representatives, as before remarked, must gather together at regular appointed periods for the purpose of comparing notes on all these matters, and examining any difficulties that may arise. They would of course produce, for the information of all, the latest official statistics of population from their respective countries. To discuss, however, how a nation should be treated when its population exceeded its quota, or indeed exactly how that nation itself should act, would lead us too far inside the gates of Utopia.

In some such way, then, the human intellect and its product, scientific method, may at last lay the true and only foundations of a world-wide peace and a better state of things for all the races of man. There would seem to be no other scheme that warrants any real degree of confidence. But here, indeed, is there fit scope for the combined endeavour alike of philosopher, scientist, economist, reformer, and religionist.

Unhappily, all nations of the world have not yet arrived at the same evolutionary plane, and, in consequence, are still separated by what may easily seem unbridgeable gulfs, in outlook, custom, and belief. Enlightened knowledge, however, is rapidly spreading even now, and therein we must put our trust. But at least the white races could combine at once, and Japan and others of the more civilized peoples should quickly join them. Be this as it may, however, there is no shadow of doubt that, if a union of Europeans and Americans were effected, if their populations were improved by the combined actions of eugenic reform and preventive medicine, even though controlled ultimately in numbers within the limits proposed—there is no doubt whatever, we affirm, so high would be their general efficiency, that, so long as such

were maintained, any serious fears of peril from the coloured races might well be completely abandoned. But however great the difficulties or the doubts that assail us may be, of one thing we may rest absolutely assured—that no *high* degree of culture or progressive civilization can possibly obtain, in any general way, in a world which is populated to such an extent that there is even a distant approach to a shortage, for all, of the bare necessities of existence. The higher forms of social, moral, æsthetic, and intellectual advance are incompatible with total world overcrowding. The choice lies to-day in our hands; to-morrow it may be snatched from us.

CHAPTER IX

Misunderstandings and Objections

IT is nothing unique to encounter opposition in the bringing about of almost any kind of reform. Innovations, small or great, are not usually regarded at first with favour. It is no slight matter to induce a man to alter the cut of his coat or the trim of his beard from the prevailing standards; and, with the ladies, accepted mode is perhaps even more despotic still. Great originality of mind and a quite uncommon strength of character are generally required to break the bonds of established fashion, and it is little short of amazing to observe the inconveniences, and often suffering, to which most persons will cheerfully submit in attempts at conformity, even in trifling and unimportant detail.

With the deeper problems of life, change from settled or ancestral custom is no less difficult to achieve. Indeed, it has sometimes needed a revolution to upset an idea that has been handed down from generation to generation. It matters not whether such are based upon the profoundest wisdom of sages, or the superstitions and prejudices of children: once generally in vogue and implanted in the minds of men, it requires no slight force to uproot them. Such is the power of public opinion. History teems with instances of these things. Consequently, it is not with any marked degree of surprise that one meets with an embittered resistance from many quarters in regard to our suggested methods of solving the difficult problems of population. Nor, indeed, could one expect the reverse when we remember that before new schemes can be brought into effective operation those already being practised must be either much modified or completely removed. And, since this generally involves the personal element—the temporary loss of the few for the gain of

the many—it is quite in accordance with the constitution of human nature that those few who dread loss of emolument, dignity, or power should the new teaching prevail will fight against its adoption, literally, to the last man. This kind of thing is, unhappily, to be expected, no matter how just the cause or beneficent the object. And it is usually by the underhand weapons of misrepresentation and appeals to prejudice, rather than in clean, open contest or honest argumentation, that such warfare is conducted—upon one side, at any rate. The bitter-spirited and long-continued battles that were waged around the majestic theories of Charles Darwin, beginning some sixty-eight years ago, furnish admirable illustrations of this kind of feud. In spite of an almost unanimous dissent at first on the part of both Church and laity, the fundamental parts of those self-same theories are now accepted by the vast bulk of competent authorities all over the world. So for bigoted opposition, misrepresentation, and the hatred engendered by jeopardized self-interest and superstitious ignorance we must be prepared, bearing in mind, however, the certain assurance that, if our cause be indeed a just one, if it depend mainly for its achievement upon a more general enlightenment and the gradual removal of prejudice, ignorance, and superstition, it must indubitably triumph in the end.

With a few common misunderstandings and objections in respect of the suggestions made in these pages we now propose to deal:—

(1) It is frequently thought that eugenics and preventive medicine are either opposed, or that the one can work efficiently without the aid of the other. This kind of misunderstanding has been already treated of in Chapter VI. We indicated that the two sciences are absolutely necessary to each other, and that the original definition of eugenics may even embrace preventive medicine in its sphere of operations. Their separation may be regarded in the light of an arbitrary one, which has its advantages, in practice, as being convenient and admitting of a helpful division of labour. But, of course, the belief that they can operate with advantage

independently of each other or that they are opposed agencies is not only entirely erroneous, but may lead to very harmful results. And this cannot be too clearly borne in mind.

(2) Indiscriminate birth control by continence and contraceptives and the advocacy of very small families as a system for all cases are often mixed up hopelessly with the principles of eugenic reform. It is absurdly supposed, in fact, that eugenists are a sort of unpatriotic people who desire a decrease of population at any price whatsoever; and it is sagely pointed out (by misinformed opponents) that eugenics may, for these reasons, do more harm than good.

The real truth is that eugenists at present advocate birth control chiefly among the unfit—to humanely reduce the numbers of these unfortunates, and thereby relieve the fit of the burden of supporting them; but for the most part they denounce such procedure among those of sound stock, and especially do they condemn and deplore undue restriction of the fit for selfish reasons alone. They regard this latter kind of restraint as wholly unpatriotic and to be severely reprobated.

It is to be carefully noted here that the control of total population, discussed in our last Chapter, is a final ideal for the future. Such a control should be the concern of the State in conjunction with the individual, and should be regulated accordingly. Furthermore, as we have suggested, its safe, efficient, and complete operation can only come into being *after* our present population has been thoroughly purged and improved, as a whole, by the combined action of eugenic reform and preventive medicine, and *after* international understandings and unions have been firmly established—when, in fact, population control has been adopted as *the* basis upon which to found international peace. But until our powerful neighbours become persuaded to submit to the inevitable, agree to fall into line with us, and control their total populations according to the dictates of reason, philanthropy, and science—until then, obviously, we cannot afford to restrain our numbers in any marked degree,

but must content ourselves in the meanwhile by seeing to it that our population is of the soundest quality attainable, and sufficient, numerically, as well.

(3) A somewhat ill-defined idea still exists that it is against the principles of religion to limit the population of the earth by reasonable forethought, and humanitarian and scientific method. Carried to its logical conclusion, this idea would seem to advocate an unhindered increase of all kinds of humanity (good or bad, sound or unsound, healthy or diseased) till the earth was so overrun by their progeny that the very last states of misery, disease, and degeneracy obtained, the heaped-up, poverty-stricken, utterly sordid and bestialized masses of unhuman creatures being restrained only from yet further multiplication by the unavoidable forces of starvation, disease, and warfare. The roots of such ideas clearly have their foundations in the dogmas of many primitive religions, one of these being the teaching that to leave behind a progeny (and especially a male progeny) was essential to salvation. But, surely, these are not the general methods of thought in our present civilizations? And as regards the unlimited multiplication of humanity, with the consequent degradation of the species, surely again there can linger no doubts of its sheer disgracefulness in the mind of any modern person who pretends to even a moderate degree of culture. We submit, in fact, that no truly religious outlook could tolerate any such procedure for a moment.

We would, therefore, plainly ask those who are obsessed by what they vaguely term the "religious" side of the question: Whether it be the more in accordance with a real religious outlook to produce a limited population, healthy, happy, employed, and at peace, or a huge, overcrowded, starving mass, seething in filth and rags, miserable, full of disease, with many unemployed, and at constant war with each other? Also, since the earth's surface and productive powers are necessarily limited, population must always be kept down by some means. This is indisputable. We ask, therefore: Is it more truly religious to keep down population by reasoned care and

merciful foresight *before* sentient creatures are produced, no suffering resulting, or for it to be kept down *after* they have become sentient and susceptible of pain by famine, pestilence, and war constantly recurring?

It seems that there can be only one kind of answer to these queries. Hopeless and bigoted, in very truth, must a man be who deliberately clings to the old benighted prejudices concerning these matters.

(4) It is not infrequently put forward, as an argument against a further legal restriction of marriage, that illegitimacy would be much increased. But would it, in practice, be so very much increased? And in what sections of society would this increase almost exclusively occur? And if marriage were limited by law to the sound types, even though a small initial increase of illegitimacy resulted among the unfit, would there not be far more than equal compensations in other directions, both in the reduction of human suffering as a whole and economically? Again, marriage need not be illegal with the unfit where one or other party agreed to be sterilized.

Now, we will suppose that laws were passed making it illegal for the unsterilized unfit to marry. What results would follow? In all sections of the community, save the most depraved, public opinion might be safely relied upon to ensure that little or no increase of illegitimacy occurred. This is incontrovertible. However, at first, among the lowest grades of society, and before an enlightened opinion had gained much force in these regions, we will grant that a certain increased number of illegitimates would be born. But, all things considered, would this really constitute so very great an evil, as is often unthinkingly assumed? Because it does not admit of a doubt that although a slight increase of illegitimates would at first result, yet, at the same time, there would be a *considerably smaller number* of children born of unfit parents under the new scheme than under that now obtaining. And this most beneficial attainment is to be carefully noted.

Fully to understand the force of these statements, let

us descend to the slums and investigate exactly how matters stand in this regard. Though many illegitimates are now actually produced in these places, yet their numbers would certainly be greater were it not for the common practice of entering upon the ceremony of marriage just before a child is due to be born. This course is frequently pursued as being thought the most economic and least complicated. Let us now apply this knowledge to a supposed case of unfitness, firstly under the present old system, and secondly under our proposed new system, and compare results. What will happen? Under the old system: An undesirable pregnancy occurs, a marriage of "convenience" takes place, and the first child is born in wedlock—legitimate, but undesired and also unfit. The parents necessarily cohabit in future. During the next few years many other similar infants have inevitably followed (in these improvident regions such is the rule)—unfit, undesired, and undesirable, but preserved, mainly at the expense of the State (directly or indirectly), by the labours of preventive medicine. Now let us turn to an exactly similar case under our proposed system—where marriage between the unsterilized unfit is illegal. As before, pregnancy occurs, and the child is born; this time it is illegitimate as well as unfit. But the parents are not married; they do not cohabit. The father, moreover, must pay so much every week from his wages towards the child's maintenance, under severe penalty for non-compliance. What results? No more children are born to this pair. And here lies the vital difference between the two cases. Under the old scheme a large family of unfits inevitably results, not infrequently wholly dependent upon the tax-payer. Under our new system a single illegitimate unfit is the State's sole burden; and, in this case, should the father be employed, he is compelled to pay a weekly contribution from his earnings. If we imagine this supposed case multiplied many times throughout the slums of all our great cities we cannot fail to be struck by the immense practical advantages of the proposed scheme over the old and existing one. By such a system a vast amount of unfit-

ness, with its concomitant suffering, would be avoided; also the cost to the tax- and rate-payer would be much reduced. We submit, therefore, that the illegitimacy bogey shrinks almost entirely from the view.

In obstinate incorrigible cases, where cohabitation occurred in respect of unmarried persons of definitely inferior stock and where unfit progeny resulted, State pressure, to enforce segregation or sterilization, should of course be permitted immediately such persons made application for any kind of relief.

(5) It is assumed by another class of objectors that were the methods of birth control to become definitely recognized as justifiable in cases of unfitness an increase of sexual immorality would follow, and, in consequence, more harm than good result.

As we have already pointed out in Chapter VI, an enlightened public opinion, once aroused, can be safely relied upon to ensure that contraceptives are not abused. Moreover, it must be clearly borne in mind that the methods of birth control are by no means *new* discoveries; they have been fully comprehended for years past by a very large section of the general public. The truth is they have long been in use among the more highly instructed, the more provident, and the more advanced. Indeed, these agencies have been employed, and are still being employed, by our most valuable types of citizen to restrain their numbers; meanwhile the unfit and totally improvident—not having easy access to, and not utilizing, these means—have dangerously multiplied. Nothing but good, therefore, as it seems to us, could result from instructing these latter in the safe and proper use of contraceptives, with the general principles of which many of them are perfectly familiar even to-day. In fact, it really amounts to this: That the only people who are not now systematically employing the agencies of birth control are the very individuals by whom they ought especially to be used. Accordingly, we cannot but conclude that infinitely more harm than good would result from withholding a sane knowledge of these matters from the poorest and most degenerate sections of the

community. A more extensive establishment of birth control clinics in the slums, therefore, to facilitate this object cannot be regarded now in any other light than as a thing eminently desirable from every point of view, rational, patriotic, economic, and humanitarian.

The time has arrived when we must put aside all attitudes of false or overweening delicacy in these matters. The exceeding urgency of the situation demands a corresponding plainness of speech and directness of action. Any kind of supersensitive or hypocritical outlook is now not only obstructive of progress but highly dangerous to our national well-being—to say nothing of the perpetuation of suffering and misery entailed. A high degree of delicacy is a fine thing when it can be safely and harmlessly indulged; but when imminent peril threatens we must take care that we do not push it to the extreme of sentimental foolishness. Contraceptive methods have long been practised in private by all kinds of persons in every grade of society; their secrets are known to all; whatever harm they were capable of doing has been already done; their public recognition, therefore, in suitable cases can only be productive of benefit to everyone.

(6) Owing to alleged and exceptional cases of eminent men having sprung from doubtful stock, it is sometimes objected to the control of unfitness that it would occasionally prevent a genius from being born, and thereby deprive humanity of a valuable acquisition. But surely to base a generalization upon rare and exceptional cases (and many even of these of questionable authenticity) is hardly a profitable, safe, or scientific method of procedure! And to breed and support, at the expense of the fittest, million upon million of the tubercular,¹ the feeble-minded, and the degenerate, to our complete undoing, upon the remote chance of once in perhaps five hundred years producing an eminent man would certainly be to pay an exorbitant price for any advantage he might bring us! Furthermore, we must

¹ The number of sufferers from tuberculosis (as under notification, December, 1926) was 358,133 in England and Wales.

not forget that, all the while, our better types would have been compelled to restrict their own multiplication on account of high taxation; and so many a genius who might with reason have been expected from their ranks would have been sacrificed. This kind of objection, therefore, can quickly be disposed of. Were it the rule for outstanding eminence to spring from unfitness the case might perhaps be different. But the observations of many workers in this field (from Galton downwards) point in an exactly opposite direction.

While dealing with this subject, however, it is necessary to draw attention to the very common confusion that exists respecting the so-called "eccentricity" of genius and definite insanity. It is not infrequently assumed that the two are in some way connected with each other. Suffice it to say that no such relationship has ever been demonstrated. Here lies the explanation of this most unfortunate misconception. The man of genius, as all will admit, is usually some hundreds of years in advance of his contemporaries. Hence his methods of life, of thought, and of outlook inevitably appear somewhat strange or peculiar to the generality of persons with whom he comes in contact. What other could one expect? And this has given rise to the unwarrantable conclusion that a bond of union obtains between the normal ways of genius and the vagaries of a mind that is positively diseased, degenerate, or mal-developed. No more ridiculous or utterly unjustifiable inference could possibly be drawn; it is one of the oldest and most absurd of popular fallacies, as a little reflection will show.

Let us suppose a perfectly sound normal man of to-day, of somewhat above average intelligence, to be transplanted into the British society of even five hundred years ago. How would he have been regarded? Probably as being totally deranged! The stake would almost certainly have claimed him! Or, again, place him in the midst of a tribe of savages of the present time who are unused to modern strangers. Should he escape being murdered as a demon he would in all probability be held sacred, and

worshipped as a madman ! So it is, also, with outstanding genius among ourselves. And it is inexcusable in any thoughtful person to confound it with mental derangement. Accordingly, it must be apparent to all that, if we wish to produce men of illustrious intellect, there are safer and surer methods at our disposal than that of encouraging the unlimited multiplication of unfits and degenerates.

(7) It is sometimes argued that extreme difficulty might be experienced in practice in inducing fit to "fall in love" with fit only. But we should not apprehend much trouble in the generality of cases. An enlightened early training, *before* the individual is faced with the emergency of selecting his mate, would go far to ensure a right outlook upon this subject.

We must remember that a strong natural tendency always exists to bring about unions between the well-adapted. Power, in the male, is ever tending to ally itself with healthful beauty in the female. These natural propensities must therefore be encouraged and supplemented by biological education on the one hand, and parental advice, precept, and example on the other. A well-brought-up young man of to-day has been instructed from youth upwards that it is entirely wrong and immoral to pay amorous address to a lady already married. He has accordingly formed the salutary habit of regarding all such persons as being completely beyond the pale of his desires ; and he is usually content so to leave them. This kind of *habit* is of vital importance in all our social relationships. Is it so very unreasonable, then, to suggest that an exactly similar habit of outlook in respect of unfitness could readily be implanted in the minds of our young people by suitable early training at school and at home ? Furthermore, when we call to mind the fact that the fit and efficient constitute as yet a decided majority in the total population, there is surely an abundance of material to choose from, even for the most fastidious among us.

The early inculcation, therefore, of a habit of mind touching these matters must be our future aim. Once

such were generally established many obstacles, now apparently insurmountable, would quickly disappear. The immense influence of recognized custom and habitual mode of regard, in determining our actions, must never be ignored.

(8) Another oft-reiterated plea is: that each person has a right to reproduce his kind; and, consequently, that to restrain procreation by the law of the land is to rob unjustly a free man of his natural rights.

But when we come to examine this objection we find that it has very little force at all. For what really is civilization but a progressive modification of the so-called "rights" of the individual? Indeed, looking more closely into the subject, one is somewhat surprised to observe in how few matters of importance the individual citizen is allowed anything approaching an absolutely free play. And this is entirely justifiable. For if he receive (as he does) countless benefits from belonging to the society that constitutes his nation, it is only fair that he should willingly undertake to be guided by any such regulations, or limitations, as are necessary for the common good of all. The vote of the majority must decide. It is indeed to be wondered at that a limitation of some kind has not been before imposed upon a reckless procreation; and its absence is only to be accounted for by the continued operation of a deep-rooted and obstructive prejudice, whose real unsoundness and paralysing influence we must strive to make plain. As we have pointed out, immigrants from other lands must now conform to certain fixed standards; why, therefore, should we not take every reasonable care of which we are capable to ensure that those to be born *within* the country shall be also of a similarly satisfactory nature?

To realize how much (or, rather, how little) absolute freedom of action is exercised by the individual in a modern highly civilized country, such as our own, let us rapidly pass in review some of the more salient events in his life-history. Enrolled upon the official register just after birth, he is thenceforth watched over by society to ensure that he is adequately housed, tended, and fed.

Severe penalties are inflicted upon cruel or neglectful parents. From the age of five his education is either undertaken by the State, or it enforces that he be suitably instructed, under penalty. From the age of sixteen to seventy, no less than some 16,000,000 of the inhabitants of the United Kingdom are taken under the wing of the State and compulsorily insured, their working conditions being also regulated by law. Furthermore, throughout life a man must wear a regulation amount of clothing in public, even while bathing in the sea, under penalty; he must not linger or sleep out at night in any public place; though starving, he must not take a loaf of bread without paying for it, otherwise he may lose his freedom completely; if he be thought mentally deranged he is liable to a similar restraint; should his country go to war he may be "combed out" from his chosen employment (without being consulted in the matter), conscripted, and compelled to fight to the death—practically under death penalty for refusal; he must pay rates, taxes, and the like upon his possessions and earnings to the State; though fatigued, thirsting, or desiring the soothing influences of tobacco, he may not buy a glass of ale, or a cigarette, save during certain officially-specified hours of the day; his own life is not looked upon as really belonging to himself, but to the State, and there is a penalty for attempting to commit suicide; he may only have one wife at a time, and the State requires that she be not within certain prescribed degrees of relationship to himself. Finally, when death at last closes the scene, his remains must be disposed of in accordance with definite directions, and the fact and cause of his decease duly and officially recorded.

Thus we see clearly that the citizen's whole life and conduct—even to small matters of detail—are really regulated by the State, by the so-called vote of the many. Consequently, why should we continue to allow *entire* freedom of action to the individual in respect of so all-important a consideration as that of populating the country?—of selecting and providing the human material for the next generation? Obviously, then, civilization is

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altogether incomplete until the community, as a whole, actively concerns itself with both the quality and the quantity of those who are to constitute its membership in the future.

CHAPTER X

Conclusion

Science, Philanthropy, and Population

IT has been our object throughout the foregoing chapters to indicate the dangers that threaten us, how they have originated, what agencies are at our disposal for overcoming them, their justification, the difficulties that attend their application, and how these are to be removed; and, finally, how great a benefit may yet be reaped by mankind in the end. We have endeavoured to show that, for human progress to continue side by side with a minimum of suffering, a means must be found of reconciling science, philanthropy, and population so that the three may co-operate in harmony. In other words, we must apply a reasoned and scientific benevolence to the problems of population, and by so doing carry out our obligations to posterity. On the other hand, we have not hesitated to emphasize the almost necessary consequences of a further neglect of these self-evident responsibilities. All that remains now is to summarize the more outstanding results of our inquiries (adding a further note here and there, as occasion demands, to make our meaning clearer), and this, as it seems to us, can best be accomplished by replying to certain direct questions which at once suggest themselves from the above remarks.

What are the evils by which modern society is menaced? From our present point of view they are two in number: firstly, a general racial deterioration; secondly, total world over-population. The former is to be observed as occurring in all the more advanced nations, its tendency being to involve the whole of

white civilization. If it progress more rapidly in any particular country, that country is in imminent danger of being submerged. If it be allowed to affect the whole of white civilization, then peril from the coloured races grows more and more urgent. On the other hand, should determined steps be taken to stem it back in any nation or group of nations, that nation or group will triumph over the rest. And should a similar course be pursued by all the white peoples, concurrently and unitedly, then the coloured threat fades quickly from the view. In evidence of a spreading degeneracy attention has been called in these pages to the very grave amount of unfitness, pauperism, and unemployment already existing, both in our own country and elsewhere; also the sinister facts and portents to be noted in connection with the differential birth-rate were pointed out. Such things speak plainly for themselves.

In regard to over-population we have seen that, while some countries are even now overcrowded, yet there is still room in the whole world for more; but that, inasmuch as there is a steady increment of some $12\frac{1}{2}$ millions each year, total over-population is only a question of time. The unspeakable horrors inseparable from this latter contingency have been roughly sketched—how general culture would speedily be lowered, humanity bestialized, the struggle for existence resumed with fierce intensity, and famine, war, and pestilence burst forth. Mankind hurled back upon itself—to strive, to devour, to prey upon each other, as the beasts that perish. Once more the degraded slave, and at the mercy of the food supply. A wretched heritage indeed for our descendants. Less happily circumstanced, perhaps, than ever were men before; since, if every land were crowded, there could be neither hope nor possibility of emigration (which is even now becoming difficult). Truly a state to be avoided.

We must now ask ourselves, How have these evils arisen? The ever-present tendency of humankind to over-populate any limited space has already been alluded

to : it lies inherent in the principle that the natural rate of increase is in geometrical ratio. Human population is always tending to double its numbers in about every twenty-five years. This fact has been established by actual observation. Furthermore, we pointed out in our Introduction how man has gradually removed, one after another, many of the original checks upon his increase, and we saw that in this pursuit he is still engaged. We cannot but conclude, therefore, that if he does not restrain himself voluntarily, total world-overcrowding is certain in the end. And towards this condition we are steadily heading year by year.

The spread of degeneracy has resulted from a multitude of causes, mainly dependent, on the one hand upon the modification that has been produced in the struggle for existence by the advance of science and civilization, and on the other upon what we have termed a short-sighted benevolence, a weak sentimentalism, a misdirected philanthropy. Owing to the interaction of these things, unfavourable human variations have not only been preserved, but multiplied.

With the discovery of America (a land of good climate, overflowing with riches, and with very few inhabitants), with the introduction of steam power (and all that has sprung from it), and on account of mechanical inventions of all kinds, an age of astounding prosperity dawned upon earth, the like of which had never previously been dreamed of. Food-stuffs, clothing, and housing materials, necessities and luxuries of almost every conceivable description, were suddenly and extensively multiplied, and transported both speedily and safely from place to place. A new epoch, in fact, had been celebrated—the steam age had been inaugurated. But how was population affected? It multiplied enormously—in many places at its highest possible rate. Also, there being a superabundance of all the simpler needs of life, a specious form of benevolence was developed and necessities were widely distributed. Side by side with all of this, science (in the shape of preventive medicine) was at work upon human conditions. It reduced death-rates from many

causes, and extended the average expectation of life. Nature's methods for removing the weedy members of society were interfered with, and all save the utterly hopeless were (and still are) preserved. So-called philanthropic agencies flourished and multiplied extensively. Reliefs of every kind were broadcasted. All were encouraged to reproduce the species, without any sort of discrimination whatsoever. In spite of better houses, slums increased throughout every civilized land. All married and intermarried with whom they wished. No heed whatever was taken of the facts of heredity or of natural inheritance; the warnings of science in this respect were railed at and ignored. The reckless, the feeble-minded, and the inefficient multiplied freely and with one accord, contaminating, without let or hindrance, the sound. Meanwhile, needless to say, taxation grew heavier and heavier; nor has it yet ceased to grow. But can it be wondered at—reviewing these things in an impartial light—that unfitness and a widespreading degeneracy have so extended themselves up to the present time that now, when sundry of the requisites are beginning to pinch, the fittest have such multitudes of highly-prolific “cripples” to support that many of them cannot even afford to marry, let alone produce and rear a family? To such a pass have a wrong-headed benevolence (during a time of plenty) and an incomplete exercise of the mighty weapon of science brought us to-day. Natural Selection has been cast aside, and no rational substitute enthroned in its stead.

The next question is necessarily: How are these evils to be remedied? We answer: by consistently combining science and scientific method with a true and philanthropic purpose. We have already shown that the very reverse of this has so far been practised, and that, while science has been invoked to conserve every kind of life, unscientific and uncivilized ways have governed the births. A chaotic inconsistency has reigned supreme; method on the one hand, and an utter lack of it on the other. In short, philanthropy, having been grossly misdirected

in the past, must now be scientifically directed upon population for the future. All that is needed is a reasonable consistency of outlook and method, and all may yet be well.

From the earliest times—from the intelligent construction of the first rude raft, the first purposeful planting of a seed, from the first speeding of the arrow upon an intended course—until the present period man has ever exercised his powers to utilize the natural forces that surround him to his ends; to achieve a benefit. Within the scope of his intelligence, within the control of his hand, are vested mighty faculties for attainment. Upon many things he has now employed them with conspicuous success; but, though gaining confidence gradually, encouraged by results, he is as yet too timid to apply them consistently to all. And herein lies his peril: he has not used them upon himself. Let us take an illustration. Let us observe the building of a modern bridge across a wide flowing river separating two old towns—a giant witness of man's reason systematically directed. The magnificent ease, the notable despatch, the calculated precision of its construction, call forth our admiration for determined method and its splendidly efficient achievements. Yet beneath the noble arches, on either shore, lie hideous slums; tenement-dwellings—some of them in the last states of dilapidation—teeming with wild-eyed, debased humanity, herded together, mis-shapen, squalid. How can such extremes be tolerated, existing side by side, at one and the same time? How can these incompatibles be endured? Here is exhibited a beauteous product of scientific method, applied to man's affairs; there an almost total disregard of it, as applied to man himself. The bridge embodies modern genius consistently exploited; the slum and its inhabitants typify intelligence withheld. Here, indeed, are glaring inconsistencies and their effects. Can one doubt for a moment what is so urgently needed? Consistency is needed. What we have applied to some things we must apply to others. We must straightway, then, administer to population what has been administered to the bridge with so manifest a

benefit. We must reconcile science and philanthropy to each other; we must look ahead to the future; we must apply eugenic reform, preventive medicine, and world population control to humanity. For in these three agencies are to be found our remedies.

If we would reduce the slums we must first purge their denizens of unfitness and diminish their numbers by the reforms we have suggested; then the poorest neighbourhoods would quickly vanish of themselves. Here, therefore, lies the true function of benevolence, charity, and a real philanthropy: to relieve existing misery and distress, and at the same time to take every possible precaution against their spread and multiplication. And these ends are to be gained not by the building of expensive houses, nor the reckless distribution of money, food, and clothing, but by encouraging a conscientious and civilized regard for posterity, by promoting a knowledge and practice of sterilization, by the endowment of birth-control clinics, and by helping only those who abstain from reproducing their misfortunes.

Now, it must not be imagined that unfitness is to be entirely removed by a single great effort in one generation; nor must it be supposed that it is confined solely to any particular class of society. Its ramifications extend everywhere, as is to be expected from our earlier remarks. A vast amount of good might certainly be effected in one generation; but so long as unfavourable variations arise (and so far as is known the causes of them may still be at work) it is the function of eugenics to keep a strict watch from generation to generation—always on the alert for their appearance, and ready for appropriate action. It is clear, therefore, that each individual, throughout every grade of the community, must realize that he has a personal responsibility in this matter, a plain and constant duty to perform. If it be argued that such entails a great deal of extra trouble, worry, or additional moral trust, the reply must be that the results would abundantly repay the expenditure, and that, so far as the moral obligation is concerned, there cannot now exist a doubt in the mind of any right-thinking person.

And it is really little short of amazing that this transcendently important subject should have been treated in the light and careless way which has until quite recently obtained.

To sum up. Eugenic reform, preventive medicine, and world population control are our remedies. Each is essential to the others. And they must be utilized in the order already indicated.

We must now consider the question: What are the justifications for the employment of remedies? Very briefly they are: All the complications and miseries that one might naturally expect to result from a totally unchecked multiplication of unfitness, and of humankind generally, upon a globe of limited size and potentialities, coupled with, and aggravated by, a maudlin sentimentalism, a misguided benevolence, and an imperfect and inconsistent application of scientific principles to population. As we have already endeavoured to show, many of these misfortunes have either actually occurred or are perilously imminent to-day. Thus we observe that inherited disabilities, disunion, labour unrest, unemployment, pauperism,¹ insolvency, and tendency to war, are all increasing; while the prospect of racial improvement, of general advance (evolutionary, æsthetic, moral, intellectual, and physical), of unity of purpose, and of world peace is diminishing.

The special sanctions for the employment of our three suggested remedies are based, on the one hand upon science, and on the other upon ethics. Our scientific foundation lies in the geometrical rate of increase and in the well-established facts of natural inheritance, each of which has already been described. The moral sanction is vested in our clear duties to posterity; in the irrefragable truth that it is undeniably wrong, brutal, and cruel either to allow children to be born of degenerate or diseased stock or to deliberately cause our descendants to become

¹ During the year 1913-14 the total expenditure under our Poor Law was £15,055,863. In 1923-24 it was £37,882,282. In 1926-27 (the year of the general strike) it was officially estimated at £49,500,000. These facts tell their own tale.

overcrowded to such an extent that the commonest decencies of human life must be sacrificed by the vast majority, and the species, as a whole, degraded and bestialized in consequence.

Surely, then, our justifications and sanctions are complete. Indeed the critical position of white civilization to-day is recognized by thoughtful persons of every nationality. And they are unanimously agreed that, unless some powerful expedient, or expedients, be quickly resorted to, the general tendency seems to point emphatically downwards.

But there are not lacking among us those who, appreciating only the outer aspect of things, draw their inferences accordingly. Many of these are held in high esteem, and thought good fellows, who take the optimistic view, and cry "All's well!" upon every occasion. But we must not forget that fourteen years ago they one and all proclaimed that no such thing as a great war could possibly take place in these "enlightened" times. The prediction, however, was scarcely justified by events. Therefore, when such persons, judging of general well-being merely from the sparkling glitter of a main street, inform us (as they frequently do) of the entire soundness of modern civilization, one should certainly regard their opinion with an appropriate degree of caution. For we are all familiar with the bankrupt whose position (maintained on credit) seemed so eminently secure until the crash came which revealed the true state of his affairs. So is it also with nations. And during this present time of apparent plenty, surface appearances alone may well be outrageously deceptive. This we must remember.

The salvation of the human race here upon earth lies in the maintenance of the happy mean of competition, already several times alluded to, betwixt inertia and bloodshed, in the preservation of a sound population, regulated scientifically in accordance with the means at our disposal. The produce of the soil, exploited by the labour of efficient persons, is our income. If we live within it, we live well, fully, happily, and at peace. But if we create excessive demands which we cannot meet, by

nurturing unfitness, by breeding unproductives, or by total over-multiplication—if, in fact, we summon too many to the feast—the inevitable evils of bankruptcy quickly supervene, and degeneracy, famine, strife, and misery are our well-merited rewards.

The next questions to be answered (to make our case complete), are: What are the obstacles in our way to a better state of things? How are they to be removed? The former have been frequently adverted to. They are, for the most part, the results of ancient custom and obsolete methods of regard, kept alive through the generations by an unenlightened early training. Prejudice, superstition, ignorance, unbridled passion, and misdirected philanthropic, religious, social, economic, moral, and political modes of outlook, have all been mentioned and discussed. It has also been our steady purpose throughout these pages to show the unsoundness and obstructiveness of many of these old ideas, methods, and postures. We have furthermore indicated the channels through which enlightenment may at last reach the masses of the people—school, pulpit, platform, press, and film. In short, fallacy must give place to reason and just argument in the end.

Long-established prejudice can be satisfactorily removed, and better things substituted, only by preparing the mind from early youth upward. The reasons for this we have already seen. When the earth was comparatively empty of human population, "Increase and multiply" was unquestionably a sound doctrine. But for altered conditions we must have altered or much modified precepts. So now, when unmistakable symptoms of degeneracy and overcrowding are manifest, the old rules of primitive man must be correspondingly adapted. The quality and degree of increase, in fact, must in future be regulated by reason and by foresight (as changing states demand) rather than by one rigid maxim for all time. The ancient quasi-religious view that children were unavoidable—were sent, indeed, rather than consciously brought into being—must be ruthlessly attacked and corrected. Each man's personal responsibility must now be clearly recog-

nized; cant and hypocrisy denounced; and a stern ethical attitude, towards the perpetuation of unfitness, upheld. But little more need be said upon this side of the subject here. The duties of a right-minded philanthropy are surely plain to read, and have been sufficiently emphasized. Man must ever lend the helping hand to his less fortunate neighbour; but while so doing it must be his gravest concern that no further multiplication of misery results. And sterilization, as we have elsewhere shown, should be of the utmost assistance in many cases.

Whatever other factors be set down as indicative of a state of high civilization, it is clear that a general diffusion of enlightenment among the masses of a people is one of the pre-eminent tokens. The level of a nation's culture is to be judged not so much by the altitude attained by its more distinguished men as by the standard reached by the generality of its citizens. Accordingly, to raise this latter must be the duty of each true philanthropist and the aim of all the educating agencies at our disposal. As we have pointed out, and for the many reasons we have given, a scientific form of education (including particularly a biological instruction) is now of essential importance in every rank of society. Lacking it, we remain but partially civilized, with no sane and proper outlook upon population, sex, or marriage, and an easy prey to every loud-voiced quack and charlatan who parades his wares. Science should be known for what it really is—for common sense refined. It should be brought into actual contact with the people, not condemned to stand alone, as it does at present—a thing apart, wrapped up in mystery. It should enter more intimately into the household and daily life of the individual. There is too wide a gap to-day between the average man and the science that surrounds him. And here, to step into the breach, to extend a most helpful hand, lies a golden opportunity for the daily and weekly press. But, unhappily, many of its publications (the study of which comprises the entire literary entertainment of millions), instead of bridging over the gulf, tend

often only to make it wider. In this wise. Uninstructed man rejoices much in marvel, always craving to be thrilled and overawed; so the popular press, desiring to obtain his patronage and give him what he wants, has acquired a most regrettable system of presenting the grave discoveries (or alleged discoveries) of science in a sensational and dramatic form, with blatant headlines and exclamatory notes, infinitely more calculated to engender a sense of vagueness, doubt, and mystification than to convey a sound and useful information to the reader. Add to which the observation that few of such "discoveries" are ever again referred to, and the justice of our strictures must be manifest to all. It would surely be altogether better to omit this "marvellous" and "miraculous" element in science, and report upon the sober, ungarnished facts of solid work accomplished, and definite, authentic progress made. Indeed, this much more helpful state of things would quickly follow of itself with the introduction of a different and more comprehensive type of early training. For, were the need of an altered kind of "news" more generally felt, the press would not be slow in satisfying the demand. The two work hand-in-hand together, ever reacting the one upon the other. It cannot, therefore, be doubted that a scientific form of education would soon breed forth a corresponding supply of information in the press; and so, with a constant flow of illumination issuing daily from this organ, supplementing and enlarging what was taught in youth, the level of civilization of the masses would also be raised accordingly and from that time onward. But in proportion as the general standard becomes elevated, so, in exactly similar degree, will our difficulties of population decline.

We may sum up, therefore, in the one word—Educate. We must circulate enlightenment widely through every medium at our command. We must spread the real truth broadcast. We must raise the level of civilization by removing superstitious ignorance. We must arouse a far-reaching public opinion touching matters of population. Then will suitable legislation spring swiftly into

being—then, and then only, will the obstacles which now surround us be finally and completely overcome.

There yet remains, however, one obstinate, deep-rooted, lingering prejudice which merits our special notice here. It has reference to what may be termed the "Imperialistic" aspect of the question. Its outstanding dogma is: That a nation must maintain a high birth-rate, at any cost whatever. This policy is proclaimed and kept in being by the "grasping," the "megalomaniac," and the "War-Lord" type of statesman (to be met with in every land), and it still has a large following even to-day. Carried to its logical conclusion, this course of action would seem to be that the peoples of the earth should compete for the highest birth-rate by any means attainable, the "prize" to be awarded to the nation that produces the greatest number in the shortest space of time. Now, from what we have said in Chapter V, it is clear that if such a policy have for its object the indefinite perpetuation of war, then must one freely admit that it will most certainly achieve its end if followed. But if peace be our aim, and be deemed at all desirable, then must it be categorically condemned. For it is transparently evident (as we have shown in Chapter V) that if all the nations *now* maintain high birth-rates war becomes inevitable, speedy, and merciless. And no one in these days of efficient espionage and communication can by any stretch of the imagination suppose that should *one* nation support a high birth-rate the others would not hasten immediately to do likewise or attack. Consequently, if we do not wish to perpetuate the devastating horrors of modern warfare (which indeed has now assumed more the character of a civil strife), our best and surest safeguards as a nation would be to improve our home stock by eugenic reform, and establish alliances with our neighbours upon the firm basis of a moderately low birth-rate *for all*. Every civilized people must come to see at last that man's humanity to man and his descendants lies not in breeding million upon million of any sort of creatures whatsoever that they may serve as sustenance to the voracious monster, War, but rather in

preserving peace, good-feeling, healthfulness, and progress by the exercise of a real statesmanship, a scientific outlook, and a reasonable restraint. The time of high birth-rates is past. It is to quality, now, that we must look.

But what of the future?

Presumptuous and incautious though to prophesy may often be, more especially when relating to the complex affairs of men and future policy, yet are we irresistibly impelled onward in this particular instance, since upon so broad and secure a foundation do the reforms suggested in these pages seem to rest that it is almost unthinkable that they should not receive a universal adoption—at least in general outline—sooner or later. And why not sooner? Are we to continue to tarry by the way and hesitate to use our powers in this matter till all our difficulties of population become well-nigh insurmountable? For is it not much easier and wiser to take stock now and impose the necessary restraints at once before degeneracy spread still further or total population become too great? We must remember that our numbers (so largely recruited from unfitness) are steadily increasing by some $12\frac{1}{2}$ millions year by year; that though a time of plenty still obtains it cannot last for long, and that its end approaches more nearly with each dawn of day. Furthermore, as we have repeatedly endeavoured to show, if once world-overpopulation were allowed to take place our plight would then have become almost hopeless, and a general decline in civilization inevitable. Were the earth a smaller place there could exist no doubts in the mind of any average person. Our recommendations for the control of health and numbers would in such a case appear self-evident to all, and their adoption be speedily assured. But it is plain that modern methods of transport and communication have made it necessary that our regard upon the world and its inhabitants should now take on a much more comprehensive kind of view than was ever needful in the past. Both, in fact, must now be brought within the compass of a

single perspective glance. Nations, we have seen, can no longer persist in isolation. Thus, all having been drawn together more and more, ancient gaps abridged, population and communication made continuous, there is clearly now no room for strife without the most appalling of results. And to this state we must adapt ourselves or perish.

The time, we say, therefore, has surely arrived when man must either take a firm and united part in his further progress or lapse into rapid decline. And it is surely incredible that he has evolved so far to such transcendent heights only once more to grovel humbly at the beck and call of food supply. Debased! because he could not regulate his numbers or his lusts, although surrounded by every scientific means desirable and fully conscious of his danger. For of what avail is it in the end, though he overcome all things else, animate and inanimate, yet fail to control himself? But we cannot believe that he has travelled thus far upon his stony way only to collapse again—beaten down!—by so obvious an adversary, and one that could be quickly overpowered by the agencies already under his command. In short, so manifestly do the means of advance point towards increased unity, peace, and happiness, so completely are the ends that they make possible in harmony with intellectual, moral, and philanthropic attainment, that it is inconceivable that man will long persist in their neglect. Such, then, is our forecast.

Perhaps at no time in history were the individual, the nation, and indeed the world, in more urgent need of a unifying principle, a co-operative aim, a cohesive and stimulating purpose. We live in an age of transition, between the old and the new. There is little of solid ground to cling to of the past, and future purpose is still not clearly revealed. Old methods of outlook and preconceived regard have lately been much shaken, but, though tottering, have not collapsed entirely. A steady policy for the future has not yet been securely founded. Men's thoughts are at present in a state of partial chaos—a stupefying inconsistency reigns supreme,

a reckless attitude of "jazz-levity" is assumed. Yet beneath the surface of it all many a mind is wishful for a more sustaining rock than this to stand on. Many an honest man longs to throw off the cloak of lightness and assumption that enfolds him, to penetrate the pall of inconsistency that confounds him, and seize firmly upon a clearer and more definite object for his being. And it is to supply just such a want, just such an aim, just such a unifying principle, just such an ideal for the direction and expenditure of a generous energy, that the reforms outlined within these pages should liberally suffice to-day. A new patriotism, a new and real philanthropy, a new element in religion, a new purpose in life, dawns upon us, not only for the individual, for a nation, for a people, but for all the races of mankind. In the study and practice of eugenics, of preventive medicine, of world population control—the three great agencies of scientific philanthropy—is enthroned a mighty force, a strong arm, which will satisfy personal endeavour (at present obscured and dissipated upon trifles), which will supply a motive of life for all to-day and a promise of progress in the future, which will discharge one's obligations fully to posterity, and, finally, stretch forth over land and sea and weld all humanity together in one coherent whole of peace, prosperity, and happiness.

Nor is evidence lacking even to-day in support of our prophecy. Eugenics Societies for the propagation of reforms have been and are being founded in many lands, and co-operation is being established between them. The recent World Population Conference, held at Geneva (August, 1927), was a most emphatic stride in a right direction. In the United States of America sterilization has actually been practised; and the Supreme Court of that country has lately upheld the operation as fully justifiable. Much is now to be hoped of this great people. Indeed, so happily are they circumstanced in the present density of their population, in the extent of their territory, in the natural resources of the land, and in climatic conditions generally, that, should they persevere in the course they have initiated, improving their stock by scientific

methods and keeping a strict watch upon their total numbers, it must be admitted by all that their opportunity of founding an almost ideal white civilization is absolutely without precedent or parallel. Splendid, indeed, should be their future.

In Europe, where civilization is comparatively of old standing, we are not so fortunately situated in many respects. Not only are we very densely populated, and our economic position considerably dislocated as a result of the Great War, but we are hampered by ancient feuds, a vast amount of unfitness, and by long-established customs and preconceptions. If we set to work consistently, however, it is not yet too late. But all the nations must be brought to realize that both degeneracy and total numbers are steadily increasing, that every year renders reform more difficult, and that there is now no more time to waste.

Progress, it must ever be remembered, is by no means *necessarily* an advance in a straight line. The facts alike of palæontology and human history bear clear witness that, in the gradual ascent, there has occurred many a back-slide into retrogression. Not infrequently an apparent rise has gone on for a long while, only to slip back again and be extinguished, plainly showing us that it was never a lasting or true adaptation in harmony with the great principles of natural economy. We must take warning, therefore, that it is not at all impossible, or even unlikely, that we, in modern civilization, may have ourselves arrived at just such a stage of false advance, of spurious adaptation. Nor, indeed, are danger-signals lacking—as we have striven repeatedly to make manifest. Accordingly, unless man at once take an active part in speeding on his own evolution by a powerful exercise of his intelligence, great may presently be his fall!

We are born heirs to a vast heritage from the past, some good, some evil; to a multitude of traditions, some helpful, others obstructive. We must discriminate. As man has slowly emerged from his chrysalis of barbarism he necessarily bears with him much that contaminates

his flashes of a more enlightened reason. But we must now cast aside the husk, the old benumbing influences. We must submit no longer to be stifled by the antiquated ideas of a bygone age—the clinging remnants of prejudice and superstition; but, shaking ourselves free of these mischievous adhesives, proceed boldly upon our course, as men with a clear purpose to achieve, convinced of its justice and rectitude. Let us hasten, then, to apply a far-seeing, a true, a scientific, philanthropy to population; let us fulfil our duty to posterity.



THE HISTORY OF THE UNITED STATES

The history of the United States is a story of growth and development. It begins with the first settlers who came to the New World in search of a better life. They found a land of opportunity, but also a land of challenges. The early years were marked by struggle and hardship, but the spirit of the pioneers was strong. They built a nation that would become a model for the world.

The American Revolution was a turning point in the nation's history. It was a time of great change and upheaval. The people of the United States fought for their freedom and independence from British rule. They won, and a new nation was born. The United States was now a free and sovereign people, and they would not be ruled by a foreign power.

The United States has a long and rich history. It is a nation of many peoples and cultures, and it has achieved many great things. It is a land of opportunity and freedom, and it is a place where people can live and thrive. The history of the United States is a story of hope and dreams, and it is a story that continues to inspire people around the world.

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The history of the United States is a story of growth and development. It begins with the first settlers who came to the continent in search of a new home. They found a land of vast resources and opportunities, but also one of many challenges. The early years were marked by conflict and struggle, as the settlers fought to establish their communities and defend their rights. Over time, the United States grew from a small colony into a powerful nation, with a rich and diverse culture. The story of the United States is a testament to the resilience and spirit of its people.

The United States has a long and proud history of freedom and democracy. From the signing of the Declaration of Independence to the present day, the American people have fought to protect their rights and liberties. The United States has been a leader in the world, promoting peace and justice for all. The story of the United States is a story of hope and possibility, of a nation that has the power to make a difference in the world.

The United States is a nation of many voices and many dreams. It is a place where people from all backgrounds and all walks of life can find a home and a future. The United States is a nation of opportunity, where the American dream is still alive and well. The story of the United States is a story of a nation that is always moving forward, always striving for a better tomorrow.

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