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BIOLOGICAL  
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WILLIAM  
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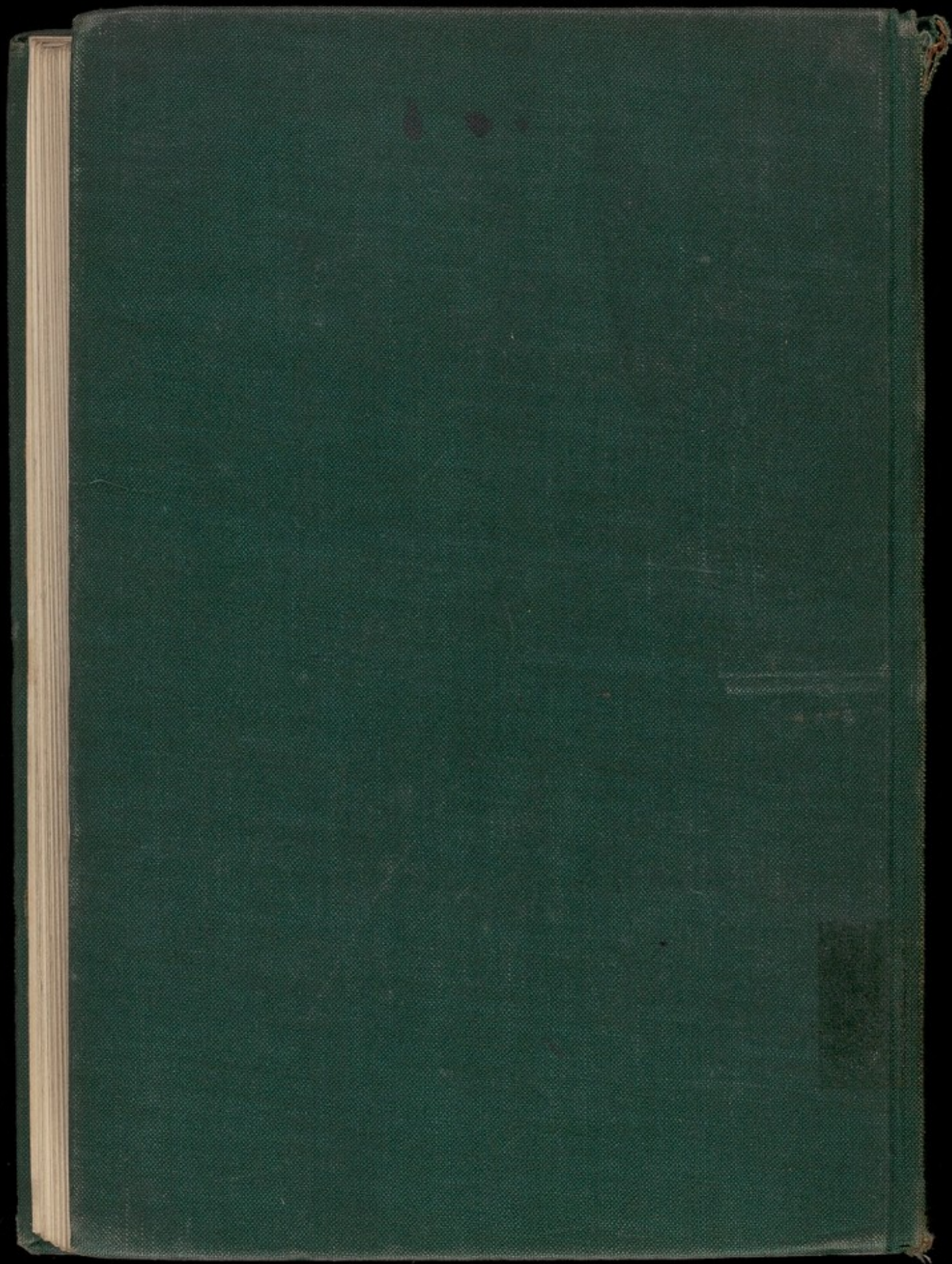
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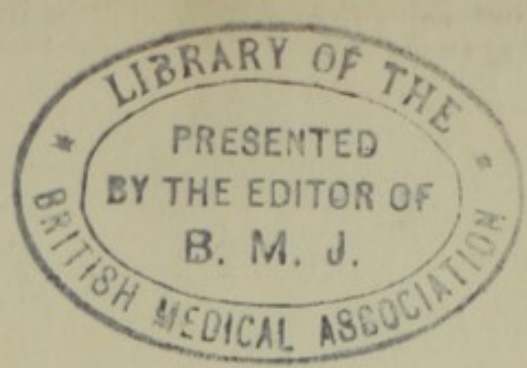


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BIOLOGICAL POLITICS

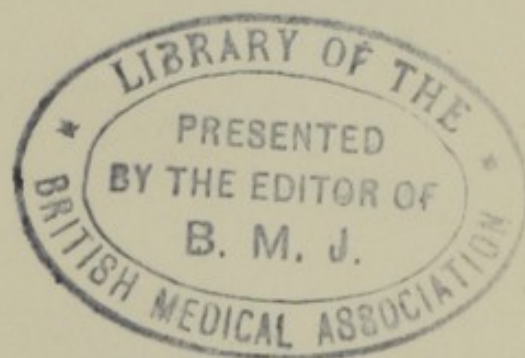
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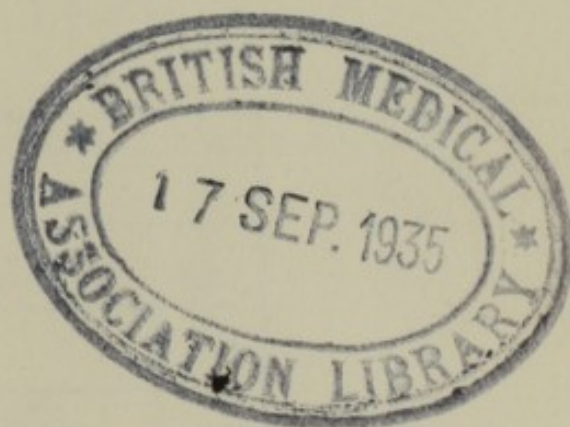
# BIOLOGICAL POLITICS

AN AID TO CLEAR THINKING



BY

F. WILLIAM INMAN,  
M.B., Ch.B., (L'pool).



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1935

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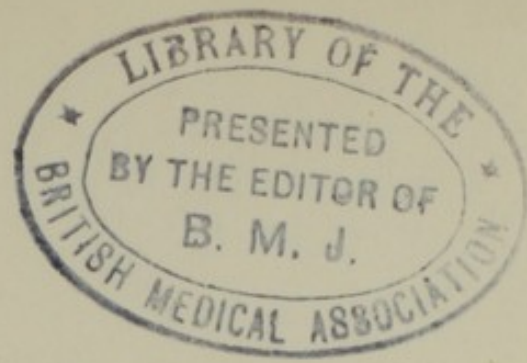
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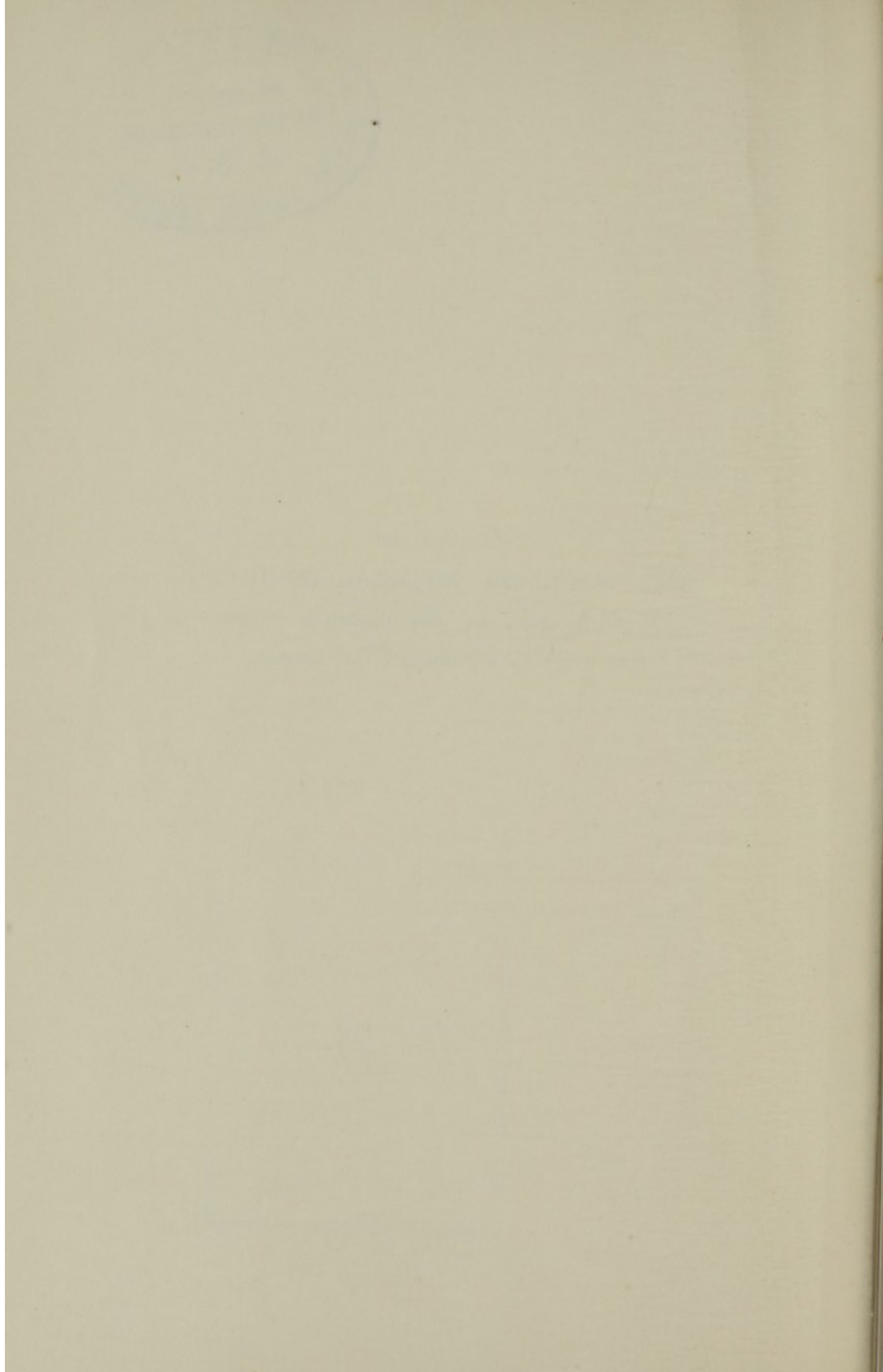
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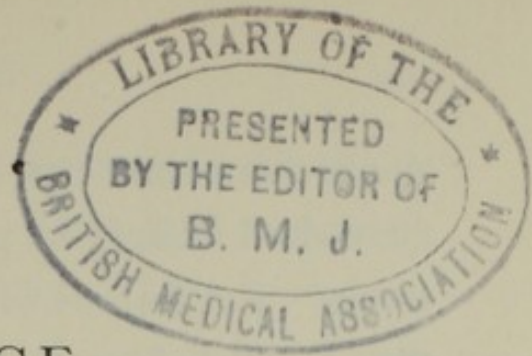
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## PREFACE

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MOST of the chapters in the following pages have been rewritten from a few lectures which I hastily prepared and delivered to meet the necessity of amusing and instructing my fellow-citizens—a necessity which many of us have to face at times. Others were written with the same object in view, but have never been delivered to an applauding or dissentient audience as the case might have been.

On mentioning the title of this book to a friend, he asked, “What might be the difference between Political Biology and Biological Politics?” A book on Political Biology I might have some difficulty in writing, but on listening to and reading the various opinions of writers on the German Aryan Theory, and Communist, Socialist, and Liberal idealisms, I began to feel myself quite competent to write on Biological Politics. This book is the outcome.

A controversy is raging over the work of Karl Marx, and its attempted carrying into practice in the Russian Soviet system. For some years now we have been deluged with anti-war literature. The system of Dictatorships so popular in Europe at



the present time has called in question all our most cherished beliefs in popular representative government. Even some of the actions of the President of the United States of America have called these fixed opinions into question again. The question of nationalism, racial and tribal descent, always of interest to the thoughtful observer, has been thrust to the front of our daily life. All these questions are too large to be exhaustively discussed in any one book, but the fundamental biological facts on which their truth, or falsity, practicability, or hopelessness, depend, are quite capable of being so compressed, or at any rate of being lightly and amusingly treated. That much of this political theory is unsound most of my readers will agree. Which is unsound and why will cause more disagreement, but then we cannot all see eye to eye. All I will say is that there is here a viewpoint which all men at the present time should carefully consider. It is possibly better and more widely known on the Continent than it is here. Which is one reason why I have written this book.

It is impossible to attempt to build a brighter future for our descendants without considering the nature of man as an animal. Of course I realize that many think of man habitually as having a semi-divine nature. Perchance this may be the cause of much of our present-day confusion. At least bear with me and take for the starting-point

that man is an animal, and so subject to all those laws, inhibitions, weaknesses, and low appetites which the lower creatures possess. This being so, all these various theories, which echo from our pulpits, and fill our daily newspapers, urgently demand an examination in the light of such facts as our biologists can give us.

There are two schools of thought as regards nature in relationship to man: those who look upon nature as an eternal enemy, always to be defeated or at least resisted; and those, like myself, who think that by copying and allowing nature to have her head the greatest happiness of the greatest number can be ultimately secured. In self-defence we have to avoid or modify her actions, but we, after all, when thus attempting to run counter to her aims, must work along the lines of least resistance, which are the rules laid down by her: we must not attempt to make our own rules. Man is still like a naked child attempting to build a more secure shelter amidst earthquakes, storms, and wild beasts.

In "Disease and Inheritance" I have drawn largely on the work of the late Archdall Reid in his book on the inherited resistance of man to alcohol and opium, so as to illustrate the rise of the better to the top and the sinking of the weaker to the bottom. This point of view, which appears to be a biological truth, has not yet been taken to



heart by our teachers. It has been either overlooked or considered to be unpalatable.

It may be considered that I have a bee in my bonnet in connection with the raising of a future race of supermen. Possibly so, but it is a fine bee, and a man who attempts to look far enough into the future should admit that it is a very likely possibility that may yet be fact.

F. WM. INMAN.

*Wallasey.*

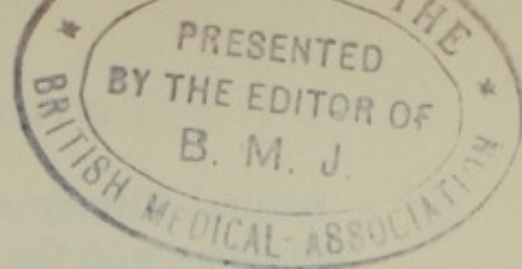
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# BIOLOGICAL POLITICS

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## CHAPTER I

### THE TRUTH WE DO NOT LIKE

AT the present time there is an outbreak of virulent nationalism throughout the whole world which greatly distresses those kind-hearted people amongst us who believe in the fraternal union of the human race. Men are as nature has made them, and it is only foolishness to expect anything more from them now than history shows us to expect. It is natural for a dog to chase a cat ; and it is just as natural for man to show an inclination to attack anyone whom he thinks he can bully without undue danger of personal harm. The behaviour of man as well as that of the dog is best explained by digging down into the prehistory of both.

If the noblest study of man is man himself, then the vagaries and peculiarities of present-day nationalism must surely be worthy of study. Local and tribal prejudice and patriotism are universal : what is their explanation from a biological point of view, and do they serve any useful purpose now, or have they done so in the past ? All of these and many more still are very important questions, bearing as they do on the possibility of world peace, pacific propaganda, international ethics, and personal ethics also. Our outlook upon the world becomes radically altered the minute we commence to take a natural view of mankind rather than the idealistic view. Which should we prefer ? Actually, if we are honest with ourselves, we should be forced to prefer the view which all our knowledge of



natural history shows to be the correct one. If we disagree with the claim for racial superiority put forward by the German writers on the subject, or if we consider them childish, or if we agree with them, still they are quite natural symptoms, and as such are well worthy of study. The weakness and aberrations of mankind are often more of vital interest than are his higher achievements in the realm of intellect.

We have been compared to little insects wheeling and curving over the surface of a dark and swiftly flowing stream, our iridescent wings catching the light of the evening sun ; sooner or later we either drop into the gaping jaws of some waiting trout, or tired and weary we ultimately fall to the surface of the dark stream, where we are swept away from human sight. Speculation as to the meaning of life is common enough, but a plain statement of the scientific view bearing on this subject is not easy to meet with in any one book. It is natural to dislike a strictly materialistic outlook upon such problems ; but that should not mean that we should deliberately remain blind to such explanations as men of this school have been able to bring forward.

Nature abhors a vacuum ; it might equally be said that nature abhors waste in any form. Thus when we are dead we become food for worms, or, more strictly speaking, we form the nourishing medium of putrefactive organisms. Whilst still alive we are the food of many thousands of different forms of life, ranging from infinitely small filter-passing organisms up to the larger forms such as lions, wolves, tigers, hyenas, and the various parasites which afflict mankind—the flea, for instance. It is only just to admit, when in a philosophical mood, that the worn-out and useless should be thus used to the best advantage, and—that is the intention of nature. How far we can safely oppose and defeat this laudable intention of nature is a question that nowadays may require further consideration.



With our age-long liberalism and idealization of the dignity of man we may be loath to admit a matter-of-fact view of the progress of man's evolution, and of the somewhat backward and deficient standing in mental capacity of the majority of men. We know that there are such beings as lunatics and defectives, yet we dislike to admit that the majority of men and women are comparatively only children in mental capacity and education. Still less do we appreciate any possibility of attempting to breed a superman, or a class of beings with improved mental capacity and physique. Yet some such thought has flitted spasmodically across the brains of those who study the natural history of man for many generations. The deliberate breeding of a superman may yet be far beyond practical politics, but it is high time that we began to attempt to weed out the dangerously numerous troops of defectives, neurotics, and mentally diseased people, or at least to endeavour to hinder their too rapid increase. We hear from Germany that the Nazis who at present control the destinies of that great and intellectual country have some such idea at the backs of their minds, and are seriously considering the problems of racial breeding and improvement. What justification, if any, have they for their pride of race, for their claim to be the true Aryans, and for their admitted ill treatment of Jews, Communists, and Pacifists? These are vital questions, which we as English, being of much the same race, should at least take an interest in, however much we may dislike their outrageous nationalism as expressed by some of their propagandists.

The usual conception of the ordinary Englishman is that nature is an enemy that has to be fought and overcome, and forced to work for the benefit of man ; but, after all, the laws of nature are the laws of God, and as such cannot be lightly brushed aside and radically altered without much danger of interference with the



ends that they are intended to serve. We have to put up with them as they are, and only to modify their action whilst still working under the same set of rules. When we think of the laws of nature we usually think of the brutality of the fight for existence amongst her children ; brutality is abhorrent to the good-natured citizen in any form ; he, living a life carefully guarded from the working of the machinery which activates all life, becomes what our ancestors would have termed effeminate, and seeks rashly to tamper with such natural movements of the wheels of life that he can reach in order to render life on this planet as humane as he naturally wishes that it could become. As a people we have a historic pride in the abolition of slavery, and in our many efforts to make life for men and animals more secure from suffering. This is all to the good and, if done with open eyes, what all of us should wish to continue ; unfortunately, it is probable that there are many snags in such a course of action if not done with due forethought as to the ultimate results. The modern, so-called educated man is so ignorant as to the aim of nature, or deliberately avoids giving it due thought, that he has a mistaken idea of his own importance in the scheme of the Universe, and seeks to alter it to his own purpose and to a more benevolent mode of working. He imagines that a real Utopia of peace, prosperity, and universal brotherhood could be brought about by some trivial readjustment in the laws of the different peoples of the world. To the thinking scientist it has long been evident that the only Utopia possible must come through the improvement of the race by some form of selective breeding and careful elimination. This is admittedly a far cry ; but the unexpectedly rapid diminution in the infantile death-rate in the large towns, along with the limited productivity of the better classes, is rapidly making it a concern of immediate urgency.



The Germans talk a good deal about the Aryan race, and about the necessity of keeping this race pure ; about the duty of the German woman in thinking of her duties in this respect. Well, there is probably more truth in all this than most of us have cared to think up to the present, although the expression is often lacking in the saving grace of humour and moderation. As for the Aryan theory, much has been written about it, although probably a closed book to the majority of our people. It led one Englishman, H. S. Chamberlain, to forswear his native country during the great war and to become a naturalized German. This kind of thing is characteristic of the sort of religious exaltation so many people are liable to show when bitten with some enthusiasm for a theory or cause. In mentally unbalanced persons this may become a true monomania. We have seen the same sort of thing in Irishmen, Scots, and Welsh, and other nations of recent years ; so of itself it is not an isolated phenomenon by any means. We may not like it, but then we do not like many things that are implanted in us by nature for her own ends : the required end in this case being the gradual breeding of new types of men, which is assisted by any obstacle which she may succeed in implanting in them so as to keep them from too freely interbreeding, and in so preventing them from breeding back to one uniform type.

Usually we end up a paper with a summary of our conclusions ; here I shall take the liberty of reversing this and stating some of my conclusions in advance. This at least will enable any—and they will probably be many—who disagree too emphatically with my conclusions to enjoy reading this, to refrain from wasting their time in further following the argument. Our people for the most part have hitherto so consistently refused to consider this view of the natural history of man that it appears to be high time that some effort



should be made to lay it before them ; if it were only to give our self-satisfied Socialist, Communist, and sentimental people some idea of an argument that they have so little considered in the past.

To the many who have a biological education these considerations may appear to be so elementary and trite that they may consider them to be scarcely worthy of further attention, yet I think there are here a few considerations that may prove worthy of even their attention. Many people, it is true, have a certain smattering of scientific knowledge picked up in the course of their general reading ; but these, I fear, are in much the same position as the man who has a theoretical knowledge of the construction and theory of driving a motor-car, without ever having had the advantage of actually owning and driving one. These, as you may say, have not got the real grasp of its realities—they lack the feel of the driving-wheel.

Firstly, then, man is only an animal, and has all the imperfections of such an animal ; he has risen high in the scale of evolution, but is yet in process of evolution, and may rise higher, or sink lower. As far as we know, this process must continue, either up or down, until life, or at least his life, comes to an end.

Secondly, as such there is nothing particularly sacred about his life. His economical value may often be a minus quantity, in spite of any sentimental value that his relatives and sometimes the Coroner may place upon it.

Thirdly, force now, as always in the past, rules his conduct and existence.

Fourthly, there are two systems of laws to which he owes obedience : one is the primary law of existence, placed upon all God's creatures, of continuing to live and to continue his species, if able to do so ; the other is the law of mutual assistance, which alone makes life



in a social community possible. This altruistic system of laws is just as natural as the first system ; but, as might be expected, comes second to the law of the survival of the fittest, or survive-if-you-can system. They are both laws of God. The first ensures the survival of those best fitted to inhabit and enjoy the earth ; the second enables such communities as our own bodies, the nests of bees and ants, and so on, to exist. In a social state such as these, each individual has to obey the laws of the community and, if need be, to sacrifice his life in the protection of the community. In the nests of some ants, and in those of the white ants, or termites, there are certain classes called the soldier ants, whose whole duty consists in fighting any enemy ; the same system is seen in our own bodies, where the white blood-corpuscles play the rôle of the soldier and policeman, and unhesitatingly attack any intruder. It is the existence of these two codes of behaviour that causes confusion in the minds of the young and unscientific. Why, they say, is it murder to kill a man under civil law, and a patriotic duty to do just that when at war ?

Fifthly, the philosophical conception that bids us to strive for the greater good of the greater number should take into account not only the living but also the greater number of the still unborn. The welfare of the present generation should be subordinated to the good of the future.

Sixthly, it follows from this that we should copy nature in endeavouring to eliminate the unfit, and to make a resolute attempt to breed a better-brained, healthier, and stronger race, or races, of man, to populate the world in the future. Only by keeping this in front of our minds can we be truly working for the greater good of the greater number.

Seventhly, as nature strives to breed new races, and works towards differentiation and not towards



uniformity, we also will have to breed new types of man, even within the same racial groups.

Eighthly, to breed a better type of man we shall have to breed from selected individuals, paying more attention to the heredity of the female than has been the habit amongst aristocratic families in the past.

Ninthly, it follows from this that the ideal aimed at in the future will be aristocratic rather than democratic. At the top will be families with abnormal brain development, and at the bottom the mass of undifferentiated people, bred at haphazard as at present.

Probably few of us really enjoy these conclusions ; the idea of breeding men as we now breed horses and dogs must be repulsive to men of our generation, brought up in the liberal atmosphere of the last and present century. It is a much more agreeable thought to think of some universal brotherhood of man, where all could be equal, both in material wealth and in opportunity of expression. Yet, if we consider the nature of man and animals without sentimental teaching obscuring our judgment, we shall probably agree that there is very little hope of improvement resulting from any action that may be taken except such as follows the natural lines of human evolution. These are the lines laid down for us, and those which the natural laws of the animal kingdom point out as the only possible way of improving mankind, and in so adding to the greater happiness of the greater number.

Tenthly, throughout the ages the better endowed in brains and bodily structure—and in the latter is included the vital characteristic of greater resistance to disease—rise to the top as if from their own specific gravity ; therefore the better classes must be of more value from a breeding point of view than the lower, and that the latter must contain the larger number of individuals that should be weeded out when possible. Thus as thinking men we are forced to the conclusion



that it would be better for the future of the human race to reverse the policy of the Soviets in Russia, and to refrain from slaughtering or otherwise discouraging the Bourgeois, and to attempt rather to get rid of the down-and-out. Normally, nature has largely succeeded in doing just this in the larger cities. When not interfered with by well-meaning humanitarians, she has largely succeeded in weeding out a good many of the children of drunkards, and the failures in the race for survival, such as the mentally defective, and the numerous classes of hereditarily weak and low resistance to disease and infection individuals. From this cold-blooded point of view it is certain that the action of much of our civilization may be compared to the mistaken activities of some Medical Officer of Health who should deliberately block up the main sewer of the Municipality under his charge.

Eleventhly, that to get the best possible results it is desirable that the better classes should be encouraged to breed more freely, and that the resulting children should be carefully selected and weeded out where desirable.

Twelfthly, that our own, or the Nordic race, is superior to any other in physique and beauty; intellectually it may be a bit slow, although it has proved its capabilities in inventiveness and love of justice and good government. Still, mentally it is not such a greatly superior race as our German relatives would like to maintain, although on the whole it is probably more judicious, steadier, and able to sum up an argument with less prejudice than most of the other races.

The better-class Jews show a superiority in brain quickness, probably due to breeding the better-class people's girls with the boys from successful families, due to their dower system; also to the severe weeding out that they have been subjected to in the mediæval ghettos, where only the best have been able to survive to transmit their characteristics to the following



generations. They are characterized by remarkable business acumen, mental quickness, and efficient and quick-acting memories. The Mediterranean race are generally quicker in the uptake than the Nordic ; more whole-hearted in love, but less stable ; markedly more superstitious and irritable ; quick to take offence and to show it ; more effusive in their friendships, but less constant. They must have taken a very important part in the foundations of European civilization.

The Alpine and Slavic race appear to be much underrated by the writers on racial mentality. They have much of the steadiness of the Nordic, and are famous for their hard working and penurious saving in small agricultural holdings ; they took an important part in building up the Roman Empire, even if they were led by a sprinkling of Nordic patricians in their early days ; much the same may be said of their function in the Greek civilization. These civilizations cannot be laid at the feet of any one of the three European races ; they must have been due to a mixture of Nordic, Alpine, and Mediterranean peoples.

Lastly we may suggest that the Hitler idea of limiting aspirants to the professional classes to a quota corresponding to the numbers of the race or religion amongst the population at large appears to be wise, and might be of advantage in a country such as India. According to G. P. Baker, in his *Charlemagne*, the caste system of India was not developed in India, but was a characteristic of the Nordic race, and was stamped out in Europe by Charles the Great when he finally overwhelmed the Saxons. These Nordic people appear to have had three castes ; marriage was restricted to intermarriage between the members of each caste ; the various clans were supposed to be connected by blood relationship, and held the land in common. Their religion appears to have been founded on human sacrifices, victims being impaled on their holy trees ;



they also practised Suttee in all probability. It is a possibility that if the scientific breeding of human beings is ultimately taken in hand, as appears to be more than likely in the not-far-distant future, we shall revert to some sort of caste system, at least for the higher intellectual classes.

Of course it cannot be suggested that such ideas can be popular at the present time ; they conflict too much with our religious and sentimental way of thinking. Still, religious ideas evolve as the human being evolves, and as knowledge becomes clearer and more widely spread, there will be no great miracle in considerable changes. Religion, no doubt, acts as a break, and rightly so—nothing is more dangerous than too rapid change. The English Church has survived the change over to Protestantism, and I trust may survive the change over to a more scientific conception of life and all the implications which such a change will bring. At any rate, a slow change is to be advocated, and any sudden attempt to alter the religious thought of the people would bring more dangers with it than advantages. It is probably going on at present in too rapid a manner for the mental health of many.

As for the immediate future, almost anything is likely to happen, and no one has much justification in attempting to prophesy ; but beyond that, as truth in time sinks to the inner consciousness of the leaders in thought and action, we may probably see attempts to deliberately improve the race, commencing with the more intelligent classes. If so, the future type of government will probably resemble the aristocratic form rather than the democratic. Men of the Nordic type would probably prefer the individualistic form of free development ; but a good deal of Socialism is already with us, and we shall no doubt see more of it, bringing with it, as it must do, a serious limitation in the free activities of the individual. Time alone can tell.



## CHAPTER II

### SENTIMENT AND REALITY

LIFE would be a poor thing without sentiment, as it would be without love and poetry ; but, that being granted, in life the real importance of seeing things clearly without the distortion inseparable from the colouring imparted by our feelings cannot be too strongly stressed. Man is so important to himself, and sees so many proofs of his own importance on every side, that he finds it a little bit difficult to realize that after all he is one with the brute creation ; and that most of the facts that are true to the natural history of animals are also true to his own.

By sentiment we mean that feeling of affection which we have for the home of our childhood, for our parents, our country, race, language, lover, wife, children, and so on. Essentially it is one of the noblest and most useful of feelings, which, as it were, has its home in our subconscious nervous system, but is constantly rising to our waking consciousness ; both when conscious and subconscious it has a decisive voice in many of our thoughts, actions, and intentions.

The Fabians and Marxists reject Christianity : their sentimental altruism and desire for the good of the weak, poverty-stricken, and down-trodden is Christian in character and largely derived from its purer teaching. Hard and thankless it seems to teach that this laudable sentiment of love for the unfortunate is dangerous to the happiness of the future. The English as a nation have not been backward, to say the least, in their thought for the workless and unhappy. Twice in English history have the gifts of the charitable to the Church for the welfare of the poor resulted in so much



of the land being in the possession of Monasteries and similar institutions, as to become a serious danger. Once in Anglian Northumberland, according to Bede, and again at the Dissolution of the Monasteries.

Perhaps a third example of injudicious charity was shown when the Poor Law relief was so freely bestowed on agricultural labourers that it began to replace wages, and had to be radically altered. To give to a child, or a beggar, is to most people an actual pleasure ; to deny is a pain that some are incapable of suffering. Just as some men become misers to such an extent that their sanity may be in doubt, so do some become so free with their gifts that the same may be suspected of them.

Amongst the German peoples we also see a great deal of sentiment ; individually they are a kindly and social race ; but these sentimental feelings may quite easily explain some of their outrageous expressions of nationalism. This excessive sentimentality may so easily develop into an unreasoning hatred of a supposed enemy ; and the numerous professors and scientific workers and writers, sheltered in the numerous universities, combining their patriotism and racial studies, have lately produced a somewhat heady brew. On the whole, continental peoples are more realistic than we are, and the views that I am attempting to show are probably more widely understood amongst them than with us. Religion on the Continent is being left more and more to the women and children, and without either humour or religion any view of life is apt to be rather stark.

It is often assumed that the evolution of man is complete, and that he is not likely to alter much in the future either in brain or physique. Looking back into history we must admit that we find little evidence of his having seriously altered in these particulars ; but when we come to look back into the history that is



written in fossils, we find that his skull and body show that they have radically altered with the passing ages ; the remains of his weapons and tools show that his skill and methods of life have also gradually improved and varied at different times according to the way of life that has been forced upon him. As the earth may possibly last for as many millions of years as have already passed since the commencement of life, this view of his present fixity of form and intelligence is possibility mistaken. We might even consider it to be a similar miracle to that of the Biblical story of the Creation, should the life of man become frozen after so many years of gradual development.

Evolution does not mean improvement : it means a gradual development of adaptation to suit a method of life or existence. An utterly unscrupulous Jewish money-lender, as depicted in so many romances, may not be an ethically pleasant person ; descended from many generations of similarly occupied persons in mediæval ghettos, his physique may be poor and his appearance unpleasant, but his brain will be the best in the line of evolution for his purpose.

The ideal of the liberal-minded Victorian age—and that is the ideal of most Englishmen up to the present time—is that every small section of people should breed freely, and should enjoy as much liberty as possible ; that ultimately every man should have an equal right and say in all the matters that concern the State ; and that no man should have a superior start in life owing to the influence of his family or wealth derived from his ancestors. Most Socialists have realized that man, having been born with unequal brain power, hence with unequal abilities, cannot retain this equality throughout his life. If he did, it would be comparable to a group of competitors in a race remaining equal and none drawing ahead of the others ; very few races of such a description have ever been seen, and we are



not likely to see many. The whole point about rearing racehorses is to enable the later offspring of the better horses to outclass the offspring of the inferior. In the race for wealth and security the offspring of those who have succeeded previously will probably outclass those who have for parents those who were unsuccessful in the previous generation. In breeding, therefore, you select the winners in every generation and endeavour to breed only from these, and attempt to get rid of the failures. In applying these simple rules to men we are opposed by the ideal of always helping the backward ; and so we get the mistaken idea of doing most for the weaker and less for the better. To get the best results for the race you will naturally have to reserve your assistance for the more promising offspring of the successful, and discourage or actually get rid of the weaker. This is naturally repugnant to our sentimental feelings, but there is no other way than this if you really intend conscientiously to do your best for the future generations of mankind. All this is opposed to those feelings of kindness and of helping the weaker which we derive from our mothers, whose maternal instinct always prompts them to assist the weak and ailing. You might say that we have become too effeminate. This has been largely fostered by the influence of some of our great literary men, such as Dickens. All of this sentimentality is good inasmuch as it adds to the amenities of life and lessens the bitterness of the unfortunate ; but like other good things it may be carried to excess ; and like other things it is good from one standpoint, but apt to be fatally destructive from another.

Truth often appears to waver about the midline of an argument. As civilization is advancing at present, it is vitally important that the truth should be faced as it is, or we shall succeed in laying up for our successors a heritage of misfortune. As in other affairs of life, it is



the extreme that may be dangerous : a moderate amount of compassion towards the weak and poverty-stricken adds to the smooth working of civilization ; it is like a lubricating oil in a machine ; without it the machine tends to work with a good deal of friction, and there is a probability of an early breakdown. Too much is apt to lead to the same result from clogging and the slipping in such vital parts as the breaking system. When every baby that was born was thought to have much the same potentialities as any other, and every life was regarded as of the same value as any other, it was only right to assist the weaker even to the disadvantage of the strong ; now, when we are beginning to see the value of breeding from the point of view of the happiness of the future, it bears quite a different aspect. When those people who rose to the top, being better endowed with intelligence and foresight, continued to produce their like freely, there may have been little to worry about ; but now, as those who are able to rise in the struggle for existence begin to leave fewer children to carry on their good qualities, it looks as if every man who succeeded in rising, instead of enriching the racial stock, was less and less likely to do so ; rather he left the rank from which he rose the weaker, and gave little or nothing to the class he rose into.

On every hand we see the results of breeding better stock in the farmyard and poultry run ; plants both useful and ornamental are rapidly being improved beyond recognition. Everywhere in nature we see some plants and animals that are in process of deterioration ; man is threatened in the same way. Is it possible so to modify this process of evolution that there shall be no danger of the loss of valuable qualities, but that there shall be a steady improvement in brain power and physique ; above all, that the tendencies to mental disease shall be lessened ? At the present time



a very large proportion of the town population, in particular, tend to suffer from nerve troubles of one form or another; these are largely inherited, but become worse, no doubt, through the stress of the exacting mental life of the towns.

Scientists who have performed so many miracles will scarcely be deterred by the misgivings of those who would prefer man to remain as we have always known him; for better or worse, efforts will inevitably be made to improve his brain and physique, general resistance to disease, and so on. What considerations of man's history and development will have to be taken into account before embarking upon such an experiment; and what will be the course, progress, and ultimate result of such an experiment?

It must in the nature of things be a work of which no man can see both the commencement and the completion; even slight results will probably be outside the power of any one man to observe. In the case of short-lived and quick-breeding animals such as dogs, a single person may in his own lifetime commence and see completed an attempt to alter materially the form and intelligence of a breed of dogs; much more so is this the case in producing new varieties of flowers and fruits. Nevertheless, the methods will be very similar, and the attempt will be strictly comparable to these successful efforts of man's intelligence and foresight.

The father of Frederick the Great did commence some such experiment in human culture, and is on record as a peculiar cranky person; perhaps he was, but there were other reasons than this experiment in human culture that made him a rather peculiar monarch. His idea was to enlist as many tall men for his grenadiers as he could lay his hands on; he is even said to have had them kidnapped from foreign countries, when, from their outstanding size, they had attracted the



eyes of his recruiting sergeants. He is then said to have married them to the tallest women whom he could find in his kingdom.

Utopias of different kinds have been conceived by many philosophers throughout the ages ; one is at the present moment struggling through failure after failure—towards what ? Lenin, Trotsky, and Stalin have had the courage of their convictions ; seeing that millions have died from bullet and famine, surely something worth while should result. They do not appear to have taken much thought of science, or of the nature of man, or of his evolution through thousands of years of bitter struggle, of acquisitiveness, and self-assertion, to the proud position of Lord of Creation. Marx might never have had any more knowledge of the nature of man than had Plato when he wrote his Utopia. The outcome appears to be the degradation of the peasants—who had risen from serfdom to the proud position of owning their own farms—back to a condition somewhat worse than that of a mediæval serf.

Is all this necessary for the well-being and happiness of the town-dweller and factory-worker in a country that for long must be predominantly agricultural ? There may be a method of making men happier, but that must lie through the difficult process of making a better man. We have bred cattle, dogs, horses, pigeons, pigs, potatoes, wheat, the vine, and what not, to our liking ; is it impossible to breed man in the same way ? Many wonderful things have been done by man—why not this ? Much may be done by patience and intelligence in the future ; but little can be done by mere political juggling. At any rate, the deliberate breeding of man may be done without the wholesale slaughter of whole classes of the more intelligent people of a nation. If we do not attempt to improve the race, we shall deteriorate.



Aldous Huxley, in an article in *Nash's Magazine*, says :

" In 1908 there were in England and Wales 156,000 mental defectives. In 1929 the number was estimated at 300,000.

" Sixty years ago there were thirty annual births to every thousand of population. To-day there are sixteen.

" In a century or two, if conditions remain what they are now, one quarter of the population of these islands will consist of half-wits.

" Some 25,000 of the feeble-minded are in institutions. The rest—about a quarter of a million—are at large.

" Half-wits fairly ask for dictators. Improve the average of intelligence, and self-government will become inevitable."

When I was a young resident in a hospital situated in a thickly populated city, I had, when I first went there, to sign large numbers of death certificates every morning, during a hot August, for infants that had died from summer diarrhœa. The same thing was usual in a hot autumn when I first went into practice. The children of the poor were decimated in this way almost every year. Those who produced most freely suffered the heaviest loss. It is doubtful if, nowadays, many practitioners in such neighbourhoods, and in such weather, sign more than one or two in a year. This means a serious interference with the scavenging work of nature, and I am afraid the full seriousness is very little appreciated.

According to Abraham Lincoln, the doctrine of Democracy consists in " the government of the people, by the people, for the people." The American Declaration of Independence proudly proclaims the Equality of Man ; the founders of the French Republic believed fervently in Liberty, Equality, and Fraternity. What shall we say of these cherished beliefs of our race, of our youth, and of the aspirations of the greatest men,



when the future shows us, in all probability, a nightmare of some men—like Wells's men of the moon—with enormous brain development, others with great physical powers, and yet others but little altered from our primitive fathers?

There appear to be certain writings on the wall which foretell the decay of the belief in Democracy. Even now we believe in the universal vote when it swings unaccountably to our own opinions, but what do we say and think of it when it moves with just as much force in the opposite direction? Italy is scarcely governed according to the strict rules of Democracy; Russia is a party tyranny; Germany is the latest recruit to the idea, and they threaten to carry it out with the exemplary thoroughness of the Teuton.

With all of these governments the opposition has ceased to exist, except in prison or exile; anyone who presumes to think that he has a right to think—at any rate aloud—runs the most appalling risks of being taken to his death, or of being otherwise disciplined for the good of his mind. The supporters of the powers that be have the right to override any safeguard that the constitution may be supposed to give them. Such government is tyranny in its most complete form, and is the direct negative of all that parliamentary government which this country has stood for in the past.

The treatment of the Jews in Russia in the years before the war was abhorrent to most of us; what about the treatment of the Jews in Germany now? It may not be quite so bloodthirsty, but it is a much more cold-blooded denial of the elementary rights of justice to a highly intelligent and civilized body of people. Is there any justification for such a course of action? We shall not be going outside probability if we say that there is no justification in the mind of any



one who believes in fair play. As a mitigation it may be pleaded that the rulers of any country may consider that they best serve the interest of future generations by stamping out, at any cost, any section of people who, owing to race, or religion, or political opinions, threaten to weaken the solidarity of the nation in the future. As an instance we may take the Revocation of the Edict of Nantes and the following dragonnades, with their attendant brutalities and horrors. However brutal and tyrannical they may have been, they did succeed in their purpose of stamping out Protestantism, and in putting an end to the religious civil wars which had distracted France for so long. This was done at the price of a great material loss to France : thousands of skilled artisans being driven abroad, carrying their skilled occupations with them, foreign countries being thus enriched with new industries which had been, hitherto, monopolies of France.

A similar attempt was made about the same time to stamp Roman Catholicism out of Ireland ; this, too, would have succeeded if pushed with the same cruelty and persistency. The Roman Catholics in Ireland were lucky to find the Protestants to be too highly civilized and merciful to go to such lengths. No doubt there would be many with sufficient brutality and foresight to be eager to go to the required extremes, but the control being in the hands of a Government at some little distance away and more tinged with the idealism of the Renaissance, and from the nature of Protestantism less convinced that the souls of men could be saved by their bodies passing through the fire, and from their race having a greater leaning towards liberty of action and belief, even in religion, it was scarcely to be expected that such determined action could be sufficiently persisted in to prove effective. It is true that penal laws were passed, but they were only partly enforced and that spasmodically.



The Roman Catholic peasants and landowners were driven across the Shannon ; but that was only for a time, as the new landowners were only too pleased to allow them to return to help in the cultivation of the land. There was a general slaughter at the capture of Drogheda and a few other places, but that was not to be compared to the systematic killing of men, women, and children which went on in France for a long period. There is little doubt that, given a little more policy of " blood and iron," as it has been called, the whole population, comparatively small as it was in those days, might have been driven into Protestantism, those who resisted being driven out or killed. The policy aimed at failed, not because it was wrong or impossible of success, but because the Protestants were too humane to carry out such a policy with sufficient constancy. As time has shown, the failure to do so has resulted in the Protestants of the South of Ireland being largely overwhelmed by the rapid breeding of the less civilized part of the population, aided by the attitude of the Roman Church towards mixed marriages. Deserted Protestant places of worship are a common sight in the South. Possibly this very success may prove the greatest danger to the Roman Catholic religion, now that the country has succeeded in throwing off its allegiance to the remainder of the British Isles.

The Roman Emperors strove spasmodically to put down Christianity ; if they had succeeded, it is possible that they might have prolonged the life of the Empire. At any rate, the pacific beliefs of the early Christians were a source of weakness down to the close of the Eastern Empire : large numbers of men refusing military service, which was generally disliked, whilst large numbers retired into monasteries, and in an idle life of unworldliness deprived the Empire of its natural defenders and tax-payers. Hence the necessity of the



heavy taxation to pay for the services of mercenaries. This had two fatal results : the paid foreigners had no patriotic attachment to the country, and the necessary taxation drained the life and energy out of the Empire. To this must also, in fairness, be added the weakness resulting from the various epidemics of disease that swept through the land.

In our own days the Turks have practically annihilated the former large Armenian and Greek Christian population in their still remaining territories : hence the strength of the diminished but revived Turkey.

So we see that, although this is a very unpleasant subject for discussion, there is enough in history, if not to justify the Nazis in their treatment of the Jews, yet enough to explain some of their viewpoint. Sheer jealousy of the more successful and more brainy felt by the less successful and less brainy is one of the most potent actual causes that we can safely guess at. Nationalism is a very powerful and unscrupulous creed, and it would only be possible for a very powerful League of Nations, backed by overwhelming military force, even to think of attempting to control it when out of hand.

The fact is that force is the only thing that can control us when our interests lead us to brush aside the rights of a weaker nation, or a minority of our own people. With and by force we have reached our present state of development ; by its use we have subjugated the animal and vegetable kingdoms ; we live on the young of cattle, sheep, and other domestic animals, whose remote ancestors we succeeded in enslaving and breeding to our purpose ; now they mostly would be unable to live without us. We may imagine that at one stage of our existence their ancestors might have succeeded in surpassing our own, and in so doing reversing all the history of the last two or three million years.



To illustrate the vital effect of force as applied to human affairs we have to look back into history, although the whole of life is a sufficient exhibition of its decisive effect, as is the plight of the Jews in Germany at this present time. Our people have been always loath to punish rioters and rebels too severely ; and this has been a source of self-congratulation to us, but it is a policy that may easily be carried to the verge of disaster, as it has been in recent years. A cancer or a rebellion requires similar drastic treatment, and the timidity of the surgeon or statesman may equally be fatal. As President Roosevelt said, "The first duty of a Government is to govern."

After Sedgemoor the severity of James the Second caused a good deal of hostile criticism, which cannot be said to have died down even now, and after the rioting in Manchester, which was known for long as the Battle of Peterloo, there was a great outcry. Because of this strong feeling excited by any severe executive action there has always been a tendency to disown any man on the spot who may have exceeded his duty by however little in his efforts to maintain order. The late General Dyer fell into disgrace through allowing his troops to continue firing a few minutes longer than was thought to have been necessary. In the heat of the moment it must be very difficult to judge the exactly correct time to produce the required impression when in the face of an enormous mob of hostile rioters. The late Justice McCardie thought that he had been unjustly blamed. At any rate, his drastic repression of the rioting at Amritsar served the purpose ; whether a milder dose would have served as well may be doubted.

Mark Antony got into trouble with Cæsar for a similar reason. When he was left in command in Italy, during Cæsar's absence at the civil war, he caused his soldiers to attack the riotous followers of Dolabella, who was proposing to pass a law exempting



debtors from paying their debts. In the attack on the mob in the streets of Rome, about eight hundred of them are said to have been killed. This action of his lieutenant placed Cæsar in an awkward position, as he was the leader of the popular party, and so these men were his own supporters as opposed to the aristocratic Republican party. Other well-known instances of the ruthless but effective employment of military force are : the whiff of grape-shot which first gave Napoleon a start in political life and suppressed the dangerous Parisian rabble which had held the reins of power since the revolution ; the final, for the time being at any rate, suppression of the same rabble by the Versailles troops, after the Commune, at the end of the Franco-Prussian war, 1870-1871. They are said to have shot some thousands of prisoners and sent as many more into exile in the pestilential convict establishments in Cayenne. The massacre of the Blues and Greens in the hippodrome at Constantinople is another instance. When the usually opposed factions united against the government of Justinian they appeared to be successful, and after severe fighting in the streets, which resulted in a good deal of the city being laid in ruins, Justinian proposed to flee and was supported by his council in this resolve. The Empress Theodora, alone opposing, succeeded in orders being given to the famous Belisarius to make another effort. A huge crowd had assembled in the hippodrome to witness the proclamation of a new Emperor. Belisarius led his troops into the hippodrome from underneath the imperial box, and they proceeded to hack to pieces the partly-armed mob, which must have much resembled the huge crowds that assemble at Wembley on the occasions of a final football match. The unruly Blues and Greens were effectively silenced for many a long day. Many more similar cases might be quoted. The opposite case of the ineffective use of force might be taken from



the history of any successful rebellion. One might be the failure of the English troops when they met the Sinn Feiners returning with the arms that had been landed at Howth, before the war. The timely use of force may be the only means of saving the community from a long period of anarchy and bad government.

Thus force, however much we may dislike it, is essential in government ; it is the power behind the throne ; as children we yield to the superior strength of the grown-ups ; we know that to do otherwise is a useless kicking against the pricks. When we reach to adult life we retain much of the mentality of childhood, and when we are able to do so love to show our freedom by turning against authority in any form. Like children we prefer to follow a leader who is strong and self-willed, and prefer something which is new to the humdrum and old. As the mental development of the majority is low, and the means of obtaining knowledge limited, it is easy to see that the rule of the lower classes is always potentially dangerous to a settled society. In addition, as the desire to better our conditions at the cost of the other man is naturally strong, we are always prone to follow a leader who is reckless in his promises : " bread and games " is a popular cry. This being so, it is natural in a form of government such as ours that there should be a periodic swing from one party to another. When both parties have much the same patriotic aims, this may be tolerable ; but when one party intends to sweep away all the safeguards of the Constitution, and utterly to undo the good work of the previous one, it looks as if it would become unworkable.

As time goes on, it will become more and more evident that the power of the State will have to be placed in the hands of those whose knowledge and intellectual development fits them for it ; less and less will be the power of the man in the street to interfere



with the scientific control of its machinery. This is why it is so important that the breeding of the clever man should be taken in hand. Naturally brainy individuals are constantly being thrown up, often from the dregs of society ; but when they do rise, under our present conditions they tend to die out with few or no descendants. Rising from the lower classes they leave these poorer, and when they have risen they follow the evil example of the rich and cease to be productive.

The natural law of the survival of the fittest applies to all God's children ; it is the first law of nature, and must be taken into account by man as by any other creature.

The law of civilization is the law of love and mutual assistance ; this is the order of a society, such as the different cells of our own bodies live under. It is, however, not of universal application. The society has to struggle as an individual for survival. The cells of our bodies help each other, but wage continual war against any foreign cell that may happen to cross the frontiers of our skin or mucous membranes.

With us the moral laws had their first origin in the necessity of the Mammalia to nurture their young, and to watch over their long period of weakness and dependence. Hence came all the altruistic rules of conduct and morals which mankind in the fullness of time has come to develop. We have the laws of the outside world, and opposed to these the rules of civilized society. Both of these systems of law are natural, and so laws of God ; nevertheless, the law of survival of the one who is able to do so must come first. A bee's nest, in its capacity as an individual, has to compete with the nests of other bees and other insects. The law of co-operation only applies to the individuals in a closely organized community ; so in the case of war breaking out you have a sudden reversal



of all your laws of morality, and this somewhat distresses our naïve pacifists. If they gave a thought to the life history of man, they might still be excused for grieving that man was still imperfect, but a good deal of nonsense would either not be written, or, if it had to be written, it would be expressed from a more strictly matter-of-fact standpoint, and not from a purely sentimental point of view.

If we consider the rule of conduct that so many admirable men have stated to be that by which we should rule our conduct and political ideas—to do that which is for the good of the greater number—we are at once perplexed by the obvious fact that the greater number are as yet still unborn. What is good for the greater number of the present generation may be very harmful for the generations that are yet to come to the end of time. It may be necessary to give lavish doles to the out-of-works of the present generation, only to find that this has taught habits of idleness and a feeling of reliance on the wealth of the country that may be incompatible with the resources of an enfeebled and poverty-stricken country in the future. The future welfare of the citizen who is yet to come, and his self-reliance and industry, are more important than the mere preservation from unhappiness of the present generation. The future should be happier if we cut down our population, even by starvation, than if we allow it to multiply under the mistaken impression that there is room for an ever-increasing number of people.

It is more important to raise a better class of men and women for the future than it is to worry overmuch as to their conditions, or the conditions of society as they are at present. Undoubtedly the poverty-stricken masses do have a very poor time ; on the other hand, the standard of life is much higher than it has ever been before, and it is still improving. In bad times they are not left to starve ; they are very much better



housed and clad ; their children are better educated than were the better classes until modern times ; and they have a very powerful voice in local and public affairs, and may, if they have the capacity, rise to a very influential position in the State.

Under present conditions of society the quicker-brained do tend to rise in the social level, and have every possibility of being able to transmit their hereditary brightness to the succeeding generations, although placed under a heavy handicap by our sentimental reformers, who have succeeded in almost taxing the man of abnormal intelligence out of existence. Our Communist friends appear to believe that the proper thing to do with these sharper-brained individuals is to shoot or to suspend them from lamp-posts, as they have done in Russia ; or to tax them out of existence, as our more humane Socialists preach and strive to do. The natural result has been in Russia that, having purchased expensive machinery, they find that they have difficulty in finding men of sufficient intelligence to run it.

It is instructive to pause and to consider the unsound basis from which the glaringly mistaken ideas of our friends so often rise : ideas that they believe in as Gospel truth. It is not everyone who is so far mistaken in his ideas as to imagine that he himself is Mahomet or Queen Victoria, although we may find such ; but many do believe that their own particular philosophy is the one and only one that will inevitably lead to a political Utopia. Mostly we have our own fixed lines of thought, and ideas that do not run along or parallel to these we unhesitatingly condemn.

Unfortunately, owing to the education of our better classes being almost exclusively confined to the classics and the traditional learning of the last century, it is only amongst a few scientists and medical men that any inkling of the real harm of all this sentimental



teaching is to be found. The majority of people are quite unaware of the real weight of the facts which make their sentimental bias so unreal and dangerous to the State and the future welfare of mankind.

The founder of Brahminism is said to have met a starving tiger in the jungle, and to have offered his thin and emaciated body to relieve its hunger pangs, so that once again it might be able to suckle its young. What a sublime instance of altruism! What a biological sin! Was he unaware that the laws of God commanded the tiger to hunt and to slay in order to live, and equally, on the other hand, commanded him to defend himself from the tiger and to slay it if he could; that it was by the constant striving of his own ancestors against just such foes that he himself had come to possess such a brain that he could visualize such a sublime negation of self? By the virtue of constant strife the eye of mankind has been able to develop its quickness; his body the upright posture; his hand its cunning in the fashioning and use of weapons; his brain the capacity to invent and to use them; his imagination to see that in existence there might be something more worth while than mere existence.

It is not right to imagine that the tail should wag the dog, but many at the present time appear to believe this. In Russia, having cut off the head of the dog, they find that it is necessary to grow another; and, as history teaches, the second is invariably fiercer than the first. It is the history of King Log over again: the stork always proves a more savage ruler than the inactive log. Lenin and Stalin have proved fairly satisfactory examples of this simple truth in natural history. Having killed off all the upper and middle classes, they strive to replace them with Communist officials, and a new trained technical class to superintend their machinery.



When they have succeeded in doing all this, they will find that they have replaced the old upper and middle classes by new ones, and that otherwise they will be where they were. The newer leaders of the nation will be more class-conscious than the old ; they will stand more on their dignity and privileges ; they will feel less secure, and in consequence will be more stand-offish and tyrannical. Worse than that, for generations they will be less efficient ; and the whole life of the country will have been impeded in its progress towards a higher civilization by this futile destruction of the brainier part of the community. Sharpness of intellect is not universally present in mankind ; that little which is usually to be found inevitably rises sooner or later to the top ; there the better tends to breed with other successful people's children, and so naturally the brain capacity of mankind grows better at the top.

It must be the aim of the future to intensify this process—not to impede it, still less to destroy it when once commenced. The successful tend to limit their families, the less intelligent to breed more freely. How to alter this is the problem of the future : not to make all men equal, still less to enable the feeblar intellects of the bottom dogs to guide their own race over the precipice of racial deterioration and race suicide. The so-called rule of the proletariat is unscientific ; more than that, it is a dream and frankly impossible under any conditions whatsoever. The Bolsheviks believe in cutting off the heads of the upper classes, as was the advice of the friend of the Greek tyrant ; a clear thinker will prefer the killing or sterilization of the poor, the unsuccessful, and the unfit.

Human life is cheap ; the late war killed off millions of potential fathers, yet the people are too many on the ground for present conditions, in this country at



any rate. Famine and civil war may sweep away millions in Russia and China, and yet leave an abundance behind. A rising of a river may kill hundreds of thousands in China, an earthquake or tidal wave as many in Japan; but the damage is rapidly replaced. No man is so important that his death will really be an irreparable calamity, although in history the death of some men has been a real disaster. Human beings remain much as they were at the commencement of history, and what can you expect when natural evolution is so slow, and may often appear to stand still with some animals for long periods. With scientific breeding much might be done, probably in a comparatively small period of time. However, we shall never see it, as our own life is too short. We know much more than did our ancestors, but that has little effect on our brain capacity, which improves very slowly, if at all. That can only be effected by the deliberate breeding of the best with the best; by the mating of the hereditarily acute families' children with their like of the opposite sex.

In the days of old, when there was a more easily perceived struggle for existence, those individuals with better brains for leadership were picked out by the fierceness of the struggle for the position of kings and rulers. These natural leaders, rising to command, married amongst themselves, and so there was a natural tendency to breed better and better men from the brain point of view. Thus kings and aristocracies rose, and much as we dislike them and the snobbery connected with their position, we have to take them as they are, the good with the bad. The mistake of the sentimentally inclined is to hate what is natural, unduly; and to think too much of what is unnaturally altruistic, because it appears to be beautiful, and conforms to an unreal picture of an ideal state of the world and society.



Liberalism, Democracy, Socialism, and Communism are largely built on the teaching of the New Testament, and similar ideas that date back from very early indeed. They are wrong because they ignore reality ; they are directly opposed to the facts of biology or of life. True, the Russian Soviets have disowned Christianity and virulently attack it on every possible occasion ; that was to be expected, as fanatics usually disagree most savagely with those whose opinions are more nearly related to their own. The ideas of early Christianity, as those of the Communist, rest on the assumption that all men should be brothers, and that man is able to free himself from the natural laws which led to his development up from the slime to his present comparatively high status. This has taken millions of years of cannibalism and strife, and bare survival from the attacks of rivals that were often much larger and fiercer, and sometimes infinitely smaller but not less fierce. The lion and tiger man now fears but little, yet still the infinitely minute filter-passing organisms exact a dreadful number of lives ; daily, hourly, and every minute he passes in deadly danger from their unseen presence in his midst. Is he, then, freed from these laws of the brute creation ? Few men of true education would care to maintain such a thesis : yet there are many who act and speak as if this were so.

The moment we come to suggest a modification in the rules of the moral law with the idea of facilitating the production of healthier and better children, naturally we come up against the whole force of tradition and religion. The High Church and Roman Catholic view is that it is a sin to kill the unborn child, or to prevent its conception. The sexual act must be strictly confined to its natural object in the production of children. It is not my object to attack religion in any form, but it appears to be unavoidable to modify or alter our dogmatic moral law so as to enable a greater



elasticity to be obtained in the improvement of the various races and in the advance of civilization itself. If we are to experiment at the breeding of human beings, we shall perforce have to waive some of our moral scruples. Certainly a good deal of this may be visionary and very far from practical, yet such visionary ideas are often the glory of the prophets and the pioneers of human progress, so there is no necessity to apologize for them. If we should refrain from attempting what may appear to be immoral and impossible, then other nations and peoples with other ideas and religions may attempt what we have shrunk from to their own glory and gain. Religious thought alters over any period of time, and the taboos of the next generation have every appearance of being different from ours. This being so, and change being inevitable, and granted that moral laws of one or another complexion are definitely needed by man living in an organized society, we should surely guide it as far as possible into the best channels, always avoiding useless tampering with such delicate plants of slow growth. Contraceptive methods are tolerated by a good deal of modern opinion as inevitable; in the future the painless elimination of large numbers of defective children may also come to be tolerated. As a medical man I have felt little scruple in perforating the head of a child when its birth has appeared to be impossible or dangerous to the mother. Cæsarean section is too dangerous when there have been any previous attempts at extraction. The only regret that I have ever experienced has been that I have not seen its advisability earlier when it might have obviated life-long suffering or even death to the mother.

As for the moral law that the conjugal act must always be complete, this was sometimes more honoured in the breach than in the observance, even in early Bible times. It is impossible to compel men and women to



obey the most elementary rules of health when their appetites are in question. Man is only an animal and has an animal's instincts ; sexually he is not so very superior even to the dog. A bitch may only receive the male about twice a year—the human female is more often available. Then consider that the dog receives much of its æsthetic satisfaction through the sense of smell, which is much more highly developed than with us, whereas we receive the same voluptuous satisfaction more from our senses of sight and hearing. Our superiority, such as it is, is that of brain power.

Our descendants will almost inevitably kill the unwanted or defective child as did our ancestors ; probably they will kill a good many adults when insane or useless to themselves and to the community. The alternative, the free use of sterilization, appears to me to be the more repulsive and probably the crueller practice. However, every man to his own opinion—*Quot homines, tot sententiæ*.

The practical drawback to birth control is that it will be only used by the highly mentally endowed, and not by the half-witted, religious, and mentally unstable.

As long as you place man in a class by himself and not subject to the laws that govern all God's creatures, you will be wrong in your philosophical foundations and your theory of life and its meaning. As for equality, nature and the efforts of man to raise new stocks tend to diversify and not to make them more equal. Look at the appearance of the different types of dog, which have been all evolved from the same ancestor ; the different breeds of horse, and how they compare with the original primitive wild horse ; and then try to visualize the results of a similar course of intensive cultivation as applied to man. This may not be so far-fetched as it may now appear. A few thousand years may provide startling results, although we can only guess at them and can never hope to see



even their first fruits. As it is, the human race is very far from being uniform, either in appearance or in brain power. There is a good deal of difference between the Negro and the Mongolian, between the fair Norwegian and the dark Italian. If you breed from the best of each race, as you should do, you will improve each race, but at the same time you will tend to make them recede further from each other, both mentally and in appearance. Perhaps, not so much mentally, as an acute brain must be much the same whether it is placed in a black, white, or yellow skull. The way of looking at things may, however, be different; the emotional reactions may differ in quality. These finer racial differences of brain reactions are very difficult to distinguish from acquired characteristics due to the habits of thought prevalent in the district. That there are national and racial differences must be admitted by most observers, but it will take a good deal of study in the future before any broad generalizations can be laid down with even an approximation to the truth.

To interbreed races that have already moved widely apart is against the natural law; or, should we say is against that tendency which is everywhere shown by animals and plants in course of time to split up into varieties gradually moving apart? Nature is always attempting to breed new races and varieties and appears to abominate sameness. This being so, there is a strong resistance to any attempt to breed back to the same ancestral form. Nature has implanted in all her children instinctive reactions and tastes which help to avoid interbreeding between types which have commenced to move apart. The intention, or the result, is that races develop on diverging lines; there may be many exceptions, as there probably are, but such must be the general effect, or you could never obtain any advance.



All races appear either to be in course of progressing towards a higher type, or of retrogressing. Many animals that have been much higher in the scale of life are now merely parasites attached to some larger creature from which they derive all their sustenance ; when young they appear for a time as independent creatures with their own means of locomotion and their own methods of obtaining food ; later they drop back into the rôle of hanger-on.

In nature, races of plants and animals may for long periods stay put or stand still ; there may be little apparent movement towards either advance or decay in function ; but if we look at the animal kingdom as a whole, we must realize that there is always a danger from a too easy life. Most civilizations in the past have appeared to reach a certain point of development and then seem to have perished from the decadence of the race that originally produced the early improvement. Civilization in itself contains the seeds of decay ; its children weaken owing to the increased comfort, higher stage of living, luxury, and safety that it confers. Anything worth while requires constant effort, struggle, and self-denial ; self-denial is the one thing that children brought up in luxury fight shy of facing. These ideas of evolution are now received by both religious and non-religious people as being approximately correct and indisputable ; but it has not been so for long. This idea of evolution has had to face a stern opposition, and even now is received by many in a reluctant and hesitating frame of mind. My father used to say that he became a firm believer in Darwinism through listening to an eloquent preacher, in Cape Town, denouncing with great heat the new heresy that man had descended from a monkey. Having a little more knowledge of comparative anatomy than had the preacher, my father was not so much impressed by its evident absurdity as he was by the



inherent probability of some such relationship, and was surprised at his own blindness in not having seen such a transparent fact before.

From this point of view the recent trial of an American schoolmaster for teaching his scholars the truths of evolution must have converted a good many people, who were still firm believers in the Old Testament story of the creation, to a truer understanding of the history of man. In spite of the enormous sums spent on education, there is still an appalling amount of ignorance in the world ; and a good deal of this is directly due to the teaching of myths in the name of religion. If our religious teachers would concentrate on morality, and justice between man and man, more benefit might be received by the average person, and a satisfactory form of Christianity might be created. The whole subject is so difficult that at present it looks as if nothing could be done ; but in transitional periods these difficulties are usually to be met with. At present for the scientist, who is, after all, only a person who studies the truth, there is nothing to be done but to go steadily forward analysing and winnowing the false from the true.

The old Roman Emperor Marcus Aurelius says in his *Meditations* : “ If any one shall reprove me, and shall make it apparent unto me that in either opinion or action of mine I do err, I will gladly retract. For it is the truth that I seek after, by which I am sure that never any man was hurt, and as sure that he is hurt who continueth in any error or ignorance whatsoever.”

Here is a crabbed translation of what was the, perhaps, not too good Greek of the Roman Emperor ; it rings with the strength of conviction, and should put many teachers and lecturers of to-day to shame. The Emperor philosopher, in his tent before the Sarmatians, tells us what should be the aim of all of



us : to teach the truth, fearless of the consequence. He was brought up by the best teachers at that time available, yet by modern standards he would be counted an ignorant man. We stand upon the shoulders of thousands of patient seekers after truth, and yet how little of that vast mass of accumulated knowledge has soaked down to the consciousness of the greater portion of our people ; not as yet even to the minds of the majority of our so-called educated classes.

Truth and the naked truth should above all things be held sacred, our aim, and our cherished possession when once obtained. The naked truth is not always beautiful ; like the naked female form it is more apt to disgust the inexperienced beholder than to please. Something has to be left to our prejudices and frame of mind. As a stylishly dressed girl may often attract the roving eye of the male by a swish of her skirt, exposing a well-formed leg, so often a half-lie is stronger than the naked truth.

The medical profession is not always distinguished by its invariable adherence to the strict truth ; particularly is this so when in the witness box, or when avoiding an unpleasant opinion as to the future course of a patient's disease. In this latter case we have often to avoid being too outspoken for fear of making the patient worse rather than better. It is our business to heal, and this has to be set up against that other part of our business, which is to give a correct prognosis, or forecast as to the ultimate progress of the complaint. It is not every man or woman who is able to bear a distressing truth with stoicism. Once, on telling a young man that he was suffering from consumption, he fell back in a dead faint and broke a favourite chair. A few experiences such as this are very likely to lead to a rather severe economy in the use of truth. The wind has to be tempered to the



shorn lamb ; we find it necessary to tread warily and to dissemble if we are to avoid unpleasant scenes of hysterical grief. This habit of speaking down to the mentality of our patients may become a real vice ; after all we are the paid servants of our patients, and in the majority of cases they have paid to hear the unvarnished truth, whether pleasant or the reverse. If we withhold it, it should only be when we have good cause to doubt their strength of mind.

Plato, I believe, taught that we should consider the truth in the heart rather than the lie upon the lips. Yet this verges on the doctrine that the end justifies the means—a doctrine that has led to many political crimes, from the murder of the Prince of Orange to the orgy of political assassinations which led to the founding of the Irish Free State. Although most of us would stop short at murder as a means to an end, and would condemn any breach of the laws for political ends, yet, in a smaller degree, it is acted upon by most people at one period or another of their existence, showing how difficult it is to lay down hard-and-fast rules of morality to suit every occasion.

Machiavelli taught in his *Whole Duty of Princes* that the head of a State should always act upon this principle. In spite of the opposition that this work produced, it has been largely acted upon by many eminent statesmen. Machiavelli appears to recognize what I have tried to show previously, that there are two systems of law : one for the individual in an organized society, and the other in a free state of nature. In an organized society the duty of defence is taken over by the State and must not be taken in hand by the individual ; otherwise the State is in danger of dissolution from within. This is like the case of the individual cells of the human body taking on themselves the functions of free reproduction—when a cancer results.



The law of social conduct in society has been painfully built up by the thousands of generations of mankind in order to render the peaceful life within a community possible. Naturally, whilst war or revolution rages, the side which throws away all scruples as to conduct gains a certain advantage over its more scrupulous opponents. Even between warring States a certain amount of decency of conduct has been found of advantage in the long run ; and as civilization advances this should become more generally realized. The outbreak of calculated savagery in the late war was not particularly advantageous to its exponents ; if it had been more strongly condemned by the universal voice of mankind, there would now be less danger of its repetition. The condonation of political assassination has been even more dangerous ; lately we have seen high school girls in India taking on themselves the rôle of political assassin. We can, at any rate, say this of Machiavelli, that he spoke the truth as to the actual rules of political conduct in his day ; he spoke fearlessly and did not attempt to wrap up the truth with casuistical arguments. The only remedy for war and revolutionary outbreaks is to make the universal power of some organization, such as the League of Nations, all-powerful ; and to bring it into action without delay or hesitation, both in the case of war between States and in revolutionary outbreaks within States. We have some way to go before this is admitted or acted on. But I have no doubt that it will ultimately be within the province of a more powerful League of Nations ; in fact, by this sort of control only may war be finally brought to an end and the rights of minorities made secure : there is no other possible way.

In ordinary intercourse, then, it is not always possible to speak the truth as we should desire. As in so many moral laws, we have to make exceptions ; but this



should not really weaken the broad law of conduct—always to pay due regard to our duty, always to do our best to convey a true view of what we really believe and what we consider to be the real facts. To be “frank” comes from the name that the invading tribes of France bore for speaking the truth without any regard to person or place. They had the reputation of calling a spade a spade, as we say. The early Victorian lady is said to have blushed when anyone called attention to the fact that she owned such a limb as a leg.

Unfortunately, telling the truth may sometimes jeopardize the interests of a third party; and as an evasion is often equivalent to an admission, to speak the truth is not so simple a proposition as we should wish. Children soon come to realize this; and as a lie is the natural weapon of the weak, it often results in many children becoming inveterate liars at a very early age. As we get on in years and become more sure of ourselves, we are less prone to resort to a weapon that is so liable to be a source of disgrace to us. If we once find a friend tampering with the truth, we are for ever afterwards on the look out for a second departure from the strict fact, and his influence with us is diminished or lost. One feels that to have a lie told to one is almost as bad as a blow; hence, to tell one to a friend is to commit the worst possible blow to that friendship; to tell one to an enemy is to run the risk of placing in his hand a deadly weapon against us. To speak the truth, as the ancient Persian youths were taught, according to Herodotus, is one of the purest and highest virtues; truthfulness is one of the first duties of a man, and is a social obligation that should not be lightly neglected.

These are trite truths, but it is advisable to go into them so as to illustrate how complex are even the simple moral laws; and to point out how man has



two laws to bear in mind : the first, laws of existence and unbounded competition ; and the social rules of conduct and morals imposed upon us for our own comfort as units in a complex social structure. All religious laws and social codes are of this second description, and are not to be thought less well of because they have gradually risen in the long centuries of human intercourse and have not been given by some divine communication. That man has given them an artificial sanctity by placing them in his religions should not make the philosopher think any the less well of them. Rather he should ponder over their necessity, and thus give them his more ardent goodwill. Seeing their origin and use, he should be able to see when they have limitations, and when they may be usefully put aside owing to their hampering effect in any project for the improvement of the future race of mankind. We have to breed the fit and to get rid of the unfit at any price to our sentimental likes and dislikes, if we are to consult the future of our race and its ultimate happiness. Formerly it was to the general advantage that these moral laws should have an added sanctity, and that the ignorant crowd should receive them as God-given and beyond criticism ; but in these days of free publications and universal reading what might have been desirable is now impossible. Aldous Huxley's idea of impressing certain trite formulæ of belief and conduct on the immature brain by means of the constant repetition during sleep of a gramophone record is not yet practicable. We shall have to be content with the constant repetition of desirable moral platitudes in sermons and print. The Soviets in Russia appear to have seized on this old idea of propaganda with both hands, and to be working it for all that it is worth in order to bring up the youth of the country in the firm belief of the only true political faith. When ignorance is bliss it is folly to be wise.



We all have more or less sentiment, and life without it would be a poor thing. It is a question of proportion and perspective ; to know when it is desirable, and when we should beware of its proving the master. Love and marriage are where we feel the advantage, and sometimes experience the danger of sentiment. Here again it requires some nice discrimination to draw the line between the good and bad. When should the cold analysis of the brain override the tempestuous waves of emotion that are apt to sweep away all reason when we fall in love with one of the opposite sex ? Too great an indulgence in love novels may often be a greater danger than a similar indulgence in the more brutal sex novels of some French authors. As in other aspects of life, too great an indulgence in one type of reading or even thinking is apt to prove dangerous, especially when young ; even the reading of too many detective stories may prove harmful to some types of mind ; that is to say that an acquaintance with such literature is not in itself harmful, but too great an interest in it is apt to leave the brain unbalanced and with a bad perspective of life.

Townspeople, owing to a sheltered life which is far removed from the daily experience of life and death, are apt to be unduly disturbed when brought into unaccustomed closeness to wounds and illness. The fear of death and the sight of blood awaken hysterical symptoms in a very large number of people. The mere recital of the details of an accident is apt to upset the mental equilibrium of some. The hearing or knowledge of some cruelty to a child or animal may sweep away all moderation or good judgment in many well-endowed and highly respectable people ; this sort of feeling is liable to lead to excessive and harsh punishment of individuals, who by some cruelty have excited the hysterical emotions of the crowd in this manner. The officials and acts of societies for the



prevention of cruelty to animals and children require strict control on account of this. That unjust punishment is very liable to result from their activities cannot be doubted by anyone who dispassionately reads the results of their activities in the newspapers. In questions that involve the fate of the criminal; the abolition of vivisection; the abolition of so-called blood sports, and so on, we can easily perceive the working of this unbalanced hate of the natural working of the laws of life and death.

In this country the view of courtship and marriage has become unduly sentimental. On the Continent and amongst the Jews the dowry system of marriage leads to a successful man's daughters having a better chance of a suitable marriage than do those of an unsuccessful one; this has the great advantage of there being a better chance for the superior-brained families breeding together, and of so producing a superior class of children. We see this in the way in which a young Jewish doctor starting in practice is able by the aid of a dower, say of two or three thousand pounds, to obtain a good practice immediately, and is thus enabled to rear at an early age a family of superior children. His Gentile counterpart will probably marry late in life, and his wife may, although of superior looks, be the daughter of some poor family, and thus much less likely to bear a superior type of child. In this connection it is interesting to know that a barrister may receive on his marriage a slightly larger sum than a medical man.

Racially the Jews have benefited by their long apprenticeship to the evils of city life, and are hence much more resistant to the diseases of crowded communities, such as tuberculosis; in addition, favoured by the stern competition of such a life and their system of dowries, whereby the children of the successful have married together, they have amongst their better



classes a higher proportion of men with better memories, quicker wits, and more imagination: in other words, they are on the whole superior to the average better-class Gentile. It is because of the better quality of brains amongst the Jews that in Germany their race has had a larger proportion of its people in such positions as judges, lawyers, professors, bankers, doctors, and so on; hence I am afraid they have awakened the bitter animosity of their fellow middle-class colleagues, the results of which we see in the general acceptance by the German people of the cruel decision of the Nazis to limit their numbers in the professions. I do not venture to pass judgment on this policy; possibly it may be required on large social and political considerations; yet from any point of view it is a monstrous injustice: one of those things which could only possibly be thought to be desirable if absolutely necessary for the future happiness of the German people.

Some such method as that of the dowry with the daughter might be of advantage in this country; it would undoubtedly assist in the improvement in the children of the middle and upper classes; and it is these classes that are of the greatest importance to the community at large, not only because they are the best from a taxable point of view, but because they are the driving force, the directing and managing class, the saving and foreseeing class, and the backbone of the race, as has often been said.

For the higher directing class in the ultimate future, some plan may be commenced by which outstanding women shall band themselves, by the aid of the State, into some society for mutual assistance and protection in obtaining partners, outside of regular marriage, so that they may have a chance to obtain children from the best fathers available. There are many women of this class who find that their professions are not the



complete satisfaction that they had hoped whilst still young. Such women would be only too glad to obtain children at any price, if it could be done without loss of the esteem of their own conscience and colleagues.

Many of these mentally outstanding women are averse to marriage; but, as is only natural, have within their own lower nervous systems a devouring maternal instinct, that they would at any price gratify if possible. Why not? We have seen in the feminist movement what they can do. We have seen a campaign of votes for women carried to a successful conclusion, in spite of the opposition of the clearer-brained individuals of their own sex. There has also been lately a campaign carried on by some few women in favour of contraception methods for preventing undesirable pregnancies. Things like this are not so important to women as a sex as is the whole question of the rearing of the best possible children. This is, whatever some members of the sex may wish to think and say, their true life interest, which nothing, on this somewhat unsatisfactory earth, can possibly replace.

The breeding of the unfit may possibly be checked to some extent in the future by some such means as the sterilization of the unfit, of mentally defective children, of the criminal classes; such means are only likely to be of slight benefit, without being carried out on a very extensive and drastic scale, which we are far from being ready for at present.

Ultimately something will have to be done, if it is only to counteract the fewer births amongst the better endowed, and the tremendous fall in the infant death-rate in towns; a death-rate which hitherto has picked out so many children from the lower classes, from the poverty stricken, and from the children of the drunkards and improvident. This has been largely due to the replacement of the horse by the motor-car in our



cities ; hence the fewer flies to crawl over the food on the tables of the poor, over the sugar and butter, over the exposed meat, and to drop into the open milk jug.

All through nature we see a free production of young life with an equally free elimination of the greater number of those that are born. By these means nature maintains the capacity of the race to continue, and prevents deterioration of the stock. Human beings produce but few offspring and they threaten to produce fewer still. In despair at this tendency we attempt to prevent the loss of even a few ; this must be dangerous ; there must be some method of getting rid of the mass of poor, weak, and unfitted-for-survival children. These, too, are more liable to be the first born, so that when you have small families it is more urgent than ever to kill a large proportion of them.

All this leads to an increase in the poorer classes, who naturally breed faster than the better. In all the large towns, in the Victorian era, the low-down dregs of the population were kept from unduly increasing by the larger death-rate in the towns, as compared with the country and the better-class part of the population. As this death-rate was, on the whole, much heavier amongst the children of the unfit, the drunkards, the half-witted, and tubercular classes, it was a powerful aid to nature in her age-long struggle to purify the race and to make it better fitted to resist disease and deterioration. Now the lower a man is in the scale, the more is done for him by school, public health, and charitable organizations. Their well-meant efforts are receiving their due reward in a generally lowered death-rate ; the result is that there is no room for the children of the well-to-do and the self-supporting middle classes, who, indeed, are so heavily taxed that it is madness for them to produce more than a miserable one or two. In very ancient



times it was the custom to sacrifice to the gods the first-born male, and possibly, owing to the well-known inferiority of the first-born, this was not such a mistake as we might hastily judge. The work of our Public Health Authorities in so drastically cutting down the death-rate may ultimately come to be likened to the action of some well-meaning Medical Officer of Health blocking up the main drain of the race, and thus, instead of improving it, actually causing its deterioration and decay.



### CHAPTER III

#### WAR INESCAPABLE

THE evils of war are self-evident, and always must have been so, as are the other evils of disease and famine. It is not always as obvious that these evils are necessary to prevent decay in the race, and to enable the next generation to have a chance to breathe freely, and to reach their full development of life without undue crowding and cramping from an excess of population, as well as from the aged and useless. In reading a history of Rome, or indeed any history, we feel wearied with the constant repetition of seemingly useless and needless wars. In the case of the Romans we can see the inevitability of many of the barbarian wars; but the numerous civil wars that ultimately appear to have fatally weakened the Empire can have had no such justification. They were brought about by the usual method of election to the purple depending on the acclamation of the legions. From early times the troops on the occasion of a decisive victory had been in the habit of acclaiming their general as Emperor; and when this term came to mean Emperor, as it did after the times of Augustus, such an acclamation came to mean that they elected him to the imperial dignity; if other Emperors were already in existence the final result could only be settled by civil war. It will be of interest to see how it is proposed to settle the succession to the dignity of the numerous Dictators in Europe at the present time.

Amongst the many evils of civilization the growth of so many methods of destruction must surely be the most striking. War, like disease, has always been with us; it has always been a curse; how to abolish it has



always been a problem. The wars of Napoleon are said to have reduced the average height and physique of the French population. Professor Grant pointed out in a book which he published at the close of the late war that the loss fell more heavily on the best specimens of the Nordic race, who were the first to volunteer for service. Human suffering is concentrated, as you might say, in times of war; normally there is death and suffering which in the long run must equalize that of war, but it passes more or less out of sight, in hospitals, and behind the blinds of private houses. It may be that the real destructiveness of war lies more in its economic damage to the community and to the private citizen; it inevitably leads to lowering of the standards of life, and a lessening of the civilization of the country.

That war, in its wider sense, is a universal phenomenon of life requires but little reflection to establish: even the trees of the forest do their best to protect themselves against the minute organisms, beetles, and what not, that attack them; every root of grass that grows takes the room of some other seed that it elbows out in its upward thrust to light and air. Our own bodies have a wonderful mechanism of white blood-corpuscles that may be said to be our own private army and police force; these, rushing forward, careless of their own safety, attack the deadly invaders that minute by minute throughout all our life are attempting to gain a foothold within the defences of our skin and mucous membrane. Without this army we should scarcely live an hour.

The invasion of our bodies by pathogenic organisms very closely resembles the war of entrenchments that went on in France for four years. The white blood-corpuscles rush forward and attack the enemy; a poison gas, when available, is thrown out in the form of an antitoxin; when rendered defenceless by this



the bacilli, or cocci, are swallowed by the phagocytes, or white blood-corpuscles. If these are overcome by the enemy, they are carried helpless and dying with their swallowed organisms on to the surface of the wound, if it is an open one. If the wound is closed, they are very likely to escape backward into the lymphatics, and so back to the glands ; here they are liable to die and so to set free the enemy, who may then cause suppuration of the gland to take place, and from this new focus of infection the whole body may rapidly become infected. This is why it is so important that as soon as pus has formed it should be allowed to escape ; this discharge, or pus, consists of dying white blood-corpuscles and serum from the blood-stream. Behind the fighting force of corpuscles the connective-tissue cells form an entrenched line, joining end to end, rapidly multiplying so as to form a thicker barrier ; and as they grow older, forming connective tissue, which, as it matures, contracts, and so draws the edges of the wound together. Behind these young connective-tissue cells the capillaries, or small blood-vessels, thrust forward new small branches, just as in France, new light railways were constantly being laid down in the rear of any small advance. These new blood-vessels serve to bring up reinforcements and provisions, just as the new light railways did. This new growing tissue in a wound, or abscess, is called granulation tissue, as it has a granular appearance, owing to each circular new capillary loop with its covering of connective-tissue cells forming a small granule, or hillock. The poison gas, or antitoxin, can only be formed by the body cells when they have already had some experience of the kind required to paralyse the particular enemy that is actually attacking ; hence the need for vaccination and inoculation, which are a kind of preliminary practice in attacking the particular enemy whose attacks are feared in the future. When



a serum is injected it is an attempt to provide the body with the serum or fluid part of the blood of some animal, usually the horse, which owing to repeated doses of this enemy has been trained to produce the required poison gas in large amounts ; thus the blood of this animal will contain so much antitoxin that it will be available for immediate use, and when injected into the blood will be in sufficient strength to cause paralysis of the invading enemy cells.

Here, then, is a war in which millions of individuals die whether the social system, or multicellular body, lives or dies. There is no mercy ; millions die that the society may live. You see much the same thing in a bee's nest when attacked, and much the same in any social group of animals. Thus we see that man, the herb, beast, insect, or civilized society, that cannot protect itself, and so hold its own in the fierce competition of the natural world, is bound to perish ; enemies are everywhere, within and without, and no quarter is given, and none is desirable.

In any social system there are liable to be traitors and rebels ; so also, in our own body, cells are liable to run wild and to attempt to go on reproducing themselves without that nicely balanced control of instinct that makes them work in unison with other cells for the good of the whole. When this happens the new growth of cells forms a tumour, or growth of the body which is outside the control of the nervous system, and outside the disciplined life of the community ; spreading in every direction this new growth speedily saps the strength out of the body and thus causes the death of the individual. Naturally, when anything like this occurs the only hope is to destroy every single cell that is afflicted with this species of madness, otherwise there is only death to look forward to ; and as every single cell has to be destroyed it is apt to be a difficult task. We see much the same sort of thing



in civilized society, and may have to take a letter from the pages of surgery, and so come to treat every rebel in the only efficient way ; humanitarianism here, as elsewhere, is likely to prove too expensive for safety.

War, in its wider meaning as any kind of conflict between living organisms, is inescapable, as this kind of conflict is a vital part of the mechanism of life. All living organisms both animal and vegetable are perpetually at war with the millions of different forms of micro-organisms that live in the earth, water, and air. Larger forms of life, such as beetles, worms, and parasitic insects of various kinds, are all liable to carry on a very sanguinary campaign against both men and animals. It is hardly possible to draw an artificial line between these wars and the conflicts between different societies of men. In fact, it is literally true that to have peace you have to make the world a desert, and even then if you look closely enough you will find war going on in between the grains of sand. War, in its wider meaning, is, and must be, inescapable. That being so, there may be some doubt as to the possibility of totally suppressing war amongst human beings. We all have to fight against innumerable foes of all descriptions, and against constantly recurring adverse conditions. Those who put up the best fight against them will live longer than the others, but all have to admit defeat sooner or later. We mostly become accustomed to the thought of death as an inescapable evil ; if we allow ourselves to dwell too much on thoughts connected with it we are in very grave danger of becoming neurotic, or, at the least, unbalanced in thought. A healthy mind appears to have no difficulty in putting aside any thoughts that may appear to it to be unpleasant, or perhaps dangerous. If through hereditary mental weakness, or what not, we allow ourselves to become a prey to unhealthy



thoughts of this description, we are very liable to become insane, which is much worse than mere death. We may postpone death, we may alleviate its pangs, but sooner or later we are forced to submit to its unavoidable approach. So, too, as regards war between nations, sections of nations, political parties, religions, and so on ; is it not always present under the surface and liable to take on a very real and ugly form at any moment ? We may forget about death ; so, also, we can ignore the possibility of war, and say that under no circumstances shall we fight ; yet are we not behaving like the proverbial ostrich, which on the approach of danger is said to bury its head in the sand ?

We read in St. Mark, " And when ye shall hear of wars and rumours of wars, be ye not troubled : for such things must needs be ; but the end shall not be yet. For nation shall rise against nation, and kingdom against kingdom." And again in St. Luke, " He that hath a purse, let him take it, and likewise his scrip ; and he that hath no sword, let him sell his garment, and buy one." For a plausible explanation of these sayings of Jesus Christ I must refer you to the *Messiah Jesus and John the Baptist*, of Robert Eisler ; his explanation appears to be more reasonable than any other that I have met with. According to this explanation, Jesus intended to lead His followers into the wilderness in a second exodus as in the time of Moses. At that time, as even now, men travelling in those districts amongst the desert hills would naturally carry arms for their protection, and in addition they might meet with opposition from the Roman troops. Hence His advice that each of His followers should provide himself with two short swords in the manner of the dagger men of those regions. That His teaching taken as a whole was definitely pacific in character is indisputable.



We hear strange stories about the origins of war ; we hear that it started with the civilization of man, and that primitive man was ignorant of war as an organized pastime ; if so, what about the various wars we so frequently hear of amongst native races : head hunting, cannibalism, slave raiding, and other playful affairs ? Other opinions are that it is an affair of kings, statesmen, and financial magnates, and of the old men who remain at home and gloat over the gallantry and suffering of the young. No doubt kings and statesmen have often been at fault, but so have republics and free communities of all kinds ; and as to the old men, is it not more often the young who gird them on to take the final steps, and see in it a promise of excitement and an easy way to win glory and renown ? In our anti-war literature we appear to find it taken as a Gospel truth that if our own nation should only be so unselfish as totally to disarm, all the other nations would immediately follow our disinterested example.

In a recently written book by Beverley Nichols, called *Cry Havoc*, we have the usual somewhat neurotic appeals to the sensational ; there is also a savage attack on the French armament firms, possibly with some justification ; but then we have to remember that France has suffered a good deal from war in recent times, and may have some justification in attempting to make her own armament firms stronger and more efficient than those of her neighbours. As for the rest, should not all large business concerns be carefully watched and controlled by the various governments ? It would be far better to give more encouragement to the small independent man, even if he is far from being as efficient as the big firm ; even co-operative societies, which at the present time are doing much harm to the small individual grocer, should when possible be discouraged in favour of the small man



who is likely to be so much more useful to the community in the long run. We are also shown in this book a very unpleasant picture of a mother gasping out her life with her face covered with a gas mask. Well, if she had lived in Cæsar's time she might have been sold into slavery; normally she would have to die from some disease or other, and if she did live to old age she might easily die half paralysed after an apoplectic attack; if younger she might die from pneumonia or a cancer; any cause of death would be equally harrowing to the feelings of a loving son or daughter. Why harrow our feelings with what admittedly we do not like? Death in any form, at any time, is not exactly pleasant. Why give way to hysteria over such a natural phenomenon as death? Hysteria is from a philosophical point of view more horrid than is death. Death is unavoidable—hysteria shows a weakness or lack of control of the nervous system that should never be seen in a self-respecting creature such as human beings are supposed to be. Mr. Nichols also severely attacks the O.T.C. in the public schools; but has he reflected that it will always be necessary to give some military training to those who will come to occupy positions of authority in the community? Members of the upper or middle class of citizens, or at least some of them, should at least understand the various methods of applying force, and in maintaining discipline in a military or semi-military body. Surely it is advisable that someone should have the necessary knowledge of how to maintain cohesion and discipline in times of stress and commotion. We have not as yet advanced as far as have the ants on the road to socialism; they breed a special class of warrior ants. A little military training should be good for any youth; it may be that it was not the least of our mistakes after the war that we so hastily threw aside our conscription law, which we had adopted



with so much hesitation and opposition. It is easy to make fun of the teaching of so much history that is mainly about battles in our schools ; but as a matter of fact it is just this story about the wars of ancient times that makes history of interest to the majority of grown-up people, not to mention boys. It is difficult to teach anything else about history to a boy, and if you cut out the battles you are going to make your task unnecessarily difficult. The same is true of Scripture teaching, which is only tolerable to the small boy because of the vivid descriptions of the battles of David and other wars.

War is so much a normal part of the mechanism of nature that every boy receives a command at birth to endeavour to fit himself in every way possible for this dangerous occupation of his future years : hence this interest which the young take in soldiers and the history of wars. The law of nature commands all living things to live if able, and if not, to make room for those that can. This we have to take as a fact and cannot shirk : we have to do our best with life as it is.

Some time about the end of the war I happened to be dressing a carbuncle of the neck for a patient who believed in the conscientious objectors. I am afraid that I rather seriously offended him by replying to one of his remarks that I thought it was a good job that his own white blood-corpuscles were not of his opinion, as otherwise it would be a hopeless job to get his carbuncle to heal.

Ever since the war large numbers of people have been suffering from a violent revulsion from war and all its works, which, perhaps, we should not wonder at ; grouse after a drive must experience some such hysterical feeling of fear.

Lately, at the Oxford University Union, and also at the Liverpool University, resolutions not to fight for king and country under any circumstances were



adopted by large majorities. Taken on its face value such a resolution is frank treason, and might at one period of history have brought its supporters within danger from the law which prescribed hanging, drawing, and quartering as the suitable penalties. From what I remember of debating societies, such a resolution should be taken with a good deal of salt; yet straws often show the direction of the wind, and this resolution does show what a tremendous lot of misconception there is about life and its meaning amongst the young. Unquestioning patriotism is even yet desirable, and may be an urgent need in some of the crises to which we may be exposed in the future. It would be regrettable if many young men had to be shot for refusing to do their duty. In such a case it is unlikely that the firing party would refuse to obey orders whatever uniform they might happen to wear: whether that of a Socialist, Communist, or Nationalist Government would probably be immaterial. In a war for existence, which all wars are apt to be, it is only fair that those who refuse to die for their country, or to risk doing so, should suffer the fate of their less swollen-headed companions, as if you are going to compel the good citizen to die for his country, you cannot in common fairness allow the shirker, or fanatical pacifist, to escape to the shelter of a prison. No, I am afraid that in time of war, whatever your private opinions about its justice or advisability, there is only one thing for the member of a community to do, and that is to do as the Romans do when in Rome; in this case that is—to fight.

A little clear thinking is badly needed when we have such an outbreak of hysterical vapouring about war and its evils; books, lectures, and sermons continue to be poured out to the point of boredom about the wickedness of war. The Quakers and early Christians, no doubt, had similar views, and taught



them with the same enthusiasm, and with the same unfortunate result, if there were any : which would be to make the barbarians stronger. If we look at war in a calm and philosophical spirit we shall probably come to the conclusion that if it is to be done away with some peculiarly drastic machinery will have to be devised in order to do some of its necessary weeding out work. In nature there is an excess of reproduction, which is an insurance against the total loss of the tribe or species. This results in the necessity for thinning out the too thickly growing plants or animals so as to enable the survivors to live under better conditions : this is common to all creatures, man included. But the common or garden facts of natural history do not yet appear to have reached to the inner consciousness of our leaders in thought and religion. Truly the limitation of war between nations is certainly to be desired ; and it is not yet beyond hope that some more powerful League of Nations may be able to effect this in the not too far distant future. To cry out against the horrors of death does not render death more rare, or less necessary for the welfare of the future.

In the late war thousands of city-bred youths, unacquainted with the realities of raw life, were snatched from the arms of fond parents ; and with no philosophy save the effeminate doctrines of church, school, mother, and socialist, or semi-socialist parties, were cast into the furnace of shell and bullet. If those who survived were often unhinged and mentally affected it was not to be wondered at ; the survivors from such a holocaust could not be expected to be able to take a scientific view of its realities ; it was, naturally, in many cases too high a test for their nervous systems. The higher we rise in the scale of civilization, the more highly developed our brain becomes, and the more easily deranged by shocks and sensitive to the horrors evoked by our imagination we of necessity become.



The more highly educated we are and the more vivid is our imagination, the more acutely do we feel pain ; and the more easily are we overwhelmed by the sights and sounds of the battlefield. On the other hand, thousands did go through all these dangers with cool brains. That so many did so is a proof that the fighting spirit of the white race is still very high ; and that if it does not yet approach the self-sacrifice in heroic self-immolation of the warriors of the ants and bees, it has some of their quality ; and would tend to show that the instinct to protect the community has been evolved to a quite large extent in the human race, as it has been amongst other social creatures.

In nature animals and plants are always provided with a surplus of seed, or young, in order to make good the inevitable wastage of all these wars. Again, in nature there is a nice balance between the species and its means of subsistence ; and, when a drought or other accident occurs causing a shortage of food, death by famine wipes out the surplus. If a herd of deer are kept in a private park, the excess of animals have to be periodically killed off. By doing this the remainder are given a better chance of leading a happy life in peaceful surroundings protected from famine and disease. The same law applies to mankind, and if war and famine are to be ruled out, some other method of limiting this margin of safety of nature will have to be found. Otherwise the whole would be speedily reduced to misery. That preventive measures to limit the natural fecundity of women can be of much use is more than doubtful. It is, even now, applied by those people who should for the sake of the race bear more children rather than less ; whereas the people who should not have children bring up larger numbers. It is not as yet practicable politics, but we might suggest that the only way to stop wars is to have the government of the whole world carried on



by scientific experts. These would limit the population by deliberately weeding out all the unfit and inferior; so that what has now to be done by the comparatively clumsy and crude methods of nature would be done more efficiently by man's own foresight. Until then the seeds of war will still remain; and it is not very difficult to prophesy that wars from time to time will be inevitable. It is evident that no amount of birth control is likely to fulfil the need by itself. This method has the fatal defect of only willingly being employed by the better classes; by those who have foresight and are able to see the difficulties that lie in the way of the couple who attempt to bring up a large family. Another weakness is the fact that the later children of a family are often the more desirable in every way. The foolish and improvident that normally nature tends to weed out with a minimum of tears would still be protected by our blind sentimentalism, whilst the hard-working and successful would still be taxed to carry the share of the worthless; to educate their children; to find them employment; and generally to enable them to fill the places that their own more desirable children should have filled. Certain religious bodies would still be enabled to breed out the more intellectual sects by their influence over their female believers. Inferior races would still breed freely as they do at present; and any of their members who developed a higher standard of intellect would share in the demoralizing practices of the better classes of the superior races, so that even these naturally lower races would tend to get worse rather than better. Our whole tendency at present is to skim off the cream and to preserve the blue milk—this means degeneration.

The non-white races will overflow their boundaries and will only be kept from encroaching on the lands of the whites by armed force. Hence it is a delusion



to think that propaganda, founded on profound misconceptions of the nature of man, can be of any practical value, except insomuch that it will tend to weaken and disarm the nations that we should wish to be the most powerful. The Chinese and Japanese are intellectually and mentally the equal of the European races. The Japanese have carried devotion to the ideas of loyalty to emperor and country to such a high point that a large proportion of their population would willingly die if required to do so in support of their ideal of patriotism. It is doubtful if any white race could put an equal amount of devotion to face that of the Japanese Samurai. The Chinese population for generations untold has only been kept in check by devastating famines, floods, and wars. A large part of their population exists from day to day on the brink of starvation. They have overflowed into Malaya and all the accessible islands; they are only kept out of Australia by the slight remnant of race consciousness and foresight still possessed by some of our countrymen across the seas. Unless the white race in Australia will be content to give up their too high standard of living; to accept free colonization by men of their own race; to breed more freely themselves; and to keep themselves armed to the teeth and fully prepared—they are probably doomed to be swamped out.

In China, so great is the pressure of over-population, that it is no uncommon thing for poor parents to expose their unwanted female children in baskets lowered to the bottom of pits dug for the purpose at the feet of some of their temples. These are frequently rescued by our well-meaning missionaries. Another method freely adopted is to sell them into life-long slavery. The first method is undoubtedly the more humane. During the late famines caused by the civil wars and floods we have heard of their being eaten by their starving parents.



Whatever may be the strength of the League of Nations it has not proved very strong in the conflict between China and Japan. In Japan we have seen the more pacifically inclined politicians brutally assassinated by members of the ultra-patriotic war parties. This again is a very evident potential cause of wars. Pacifically inclined intellectuals are far too easily swept out of the way in times of racial excitement, as we have also seen recently in the treatment of anyone suspected of such opinions in Germany.

Many humanitarians have expressed the opinion that it is desirable for the differing human races to interbreed and blend so freely that a single more or less homogeneous race should ultimately result. This is against the natural tendency of nature, which is to go on causing varieties and new stocks to rise; even when blending does take place it has the result of causing a new race to start, and this by keeping to itself—as a gardener would keep it—prevents the desired uniformity. A race of plants or animals, it may be broadly asserted, when once started has a strong natural tendency to breed pure. If it were not so, nature could never have succeeded in raising so many different varieties of plants and animals. Attempting to interbreed races freely may on occasion be of advantage; for them to keep on interbreeding so as ultimately to produce but one race is almost unbelievable to the naturalist, whatever it may be to the sentimental theorist. All races have a tendency to try to keep their purity, and to go on improving the character of their races, as pure races, rather than to mix with other races and so produce hybrids of doubtful advantage either to their own or the other race. All races have deeply planted within them a sort of racial patriotism, and feel a revulsion from the idea of the mating of their women with men of an opposite race. This is a natural feeling, and is not confined to men alone,



but may be noticed in the lower animals. In countries where there are two races of different stocks living side by side, as in America, it may reach to an astonishing strength. Even if you could mix races in even quantities you would not succeed in producing a uniform hybrid; the races would tend to breed out pure at either side, and you would have endlessly complex grades of every degree of mixture or purity. The result would probably be far from satisfactory in any way, and from the point of creating a true fellowship of man, it would be even more hopeless. The numerous strains would be more bitterly jealous of each other the nearer they were to each other. Instead of producing peace you would introduce communal war into every nation. As scientists we must admit that it is more advantageous and practicable to work along nature's lines rather than to work in diametric opposition to them. We have to take a wide view and to make up our minds what is possible before we set out to interfere.

The aim that we have to keep in mind is to get rid of the less fit when possible, and to increase by careful breeding the value and the numbers of the best of the stocks of all races. This will be possible in the future, and must be faced if civilization is to go on advancing.

In the past this has been done, more or less efficiently, through war and competition; in the future the direct supervision of the trained intelligence may partly replace these agencies, but cannot altogether get rid of them. The laws of biology must prove too powerful to be replaced by anything that the scientific maker of our New Utopia can possibly hope to devise. He will succeed better when he keeps nearer to the lines on which man has developed through the ages. By making nature his ally he can do much; by running counter to her he is possibly asking for more trouble than he can afford.



The powerful gusts of enthusiasm that shake the soul of the susceptible youth have to be guided and trained into useful paths and not suppressed. Such passions are those of love, political idealism, and the hatred that rises so easily against political or religious institutions with which we happen to disagree. How easily are young students persuaded to deeds of political assassination, as we have lately seen in Russia, Ireland, and India. In the latter country we have recently seen young girl students coolly shooting down inoffensive magistrates in the much abused name of liberty. In China we have seen mobs of students attacking enlightened ministers; in Japan we have seen the political assassination of pacifist ministers freely resorted to. This sort of thing requires drastic suppression as the worst possible disease that the body politic is susceptible to.

It has often been stated that old men make wars, and that the young are compelled to fight them; the opposite might more truly be said to be the case. Lobengula, the King of the Matabele, in Rhodesia, is reported as saying that he was compelled to allow the young men to go to war: this appears to be the more common situation. He has not been the only king who has been driven into allowing his young men to work off their surplus energy in this way.

Youth is the time of energy when men look forward to change of any description with hope and enthusiasm; whereas, as men grow older they look more to the enjoyment of a peaceful old age; and, as they know from experience, change, even when ultimately beneficial, can bring only discomfort, the breaking up of old habits, and the learning of new tricks—what have they to gain? True, occasionally some ambitious middle-aged leader may plan his personal aggrandisement through the dubious and risky paths of war;



but such are rare in these days, and even then it is the active support of the younger men that makes this action possible. Whilst we are still young there is an inherited desire for the excitement of struggle, adventure, bloodshed, and change. This may often have a sexual basis, as in the fighting of stags at certain periods of the year ; there is a sort of youthful desire to show superior strength and bravery in the sight of the opposite sex as amongst the lower animals. This as a human characteristic was quite obvious to observers of the conduct of young men at the commencement of the late war : it was one cause—and not a small one—that made thousands of young men rush to the colours. Those who remained bashfully at home were frequently the recipients of white feathers from members of the other sex. This combative spirit in the young has sometimes proved to be a very useful factor in the past, and should not be too lightly discouraged. We might find ourselves much worse off without it. The sending of white feathers by young ladies to spur men on to do their duty has been very unfavourably remarked on ; but it has to be remembered that loving mothers did very often attempt to keep their sons back, and that every means possible had to be employed to recruit rapidly our hastily improvised armies. Most intelligent young men realized only too well what a dreadful business modern war was ; that so many of them required so little urging to do their duty was much more surprising than that some of them should have hung back. Many, indeed, went through painful operations in order that they might make themselves fit for active service. I still remember how thrilled I was at the thought of what they were going to face after their recovery whilst assisting at some of these operations. Well, we were glad enough at the time that they showed such a magnificent spirit. Our ultimate defeat was the end



of most things for those who loved our history and our country ; and after all human life is cheap enough—cheap, that is, from a detached point of view ; frightfully dear from a personal one. Victory may often be purchased at too dear a price ; but defeat in war may prove more costly than anything.

One would naturally think that war must be the worst possible way of weeding out the unfit ; when you think of the thousands of gallant lives sacrificed to the Moloch of modern war a feeling of horror fills the hardest heart, and it is difficult to appreciate the saying of Professor Keith, in his rectorial address at the University of Aberdeen, that : “ War is the pruning hook of nature ; and by it she keeps her human orchard healthy.” But, if by war you take him to mean that struggle for food and life that goes on ceaselessly in nature, you are able to see that such an assertion is only a biological platitude.

Man has developed such a power of interfering with the works of nature that he little fears the attacks of wild beasts ; and, even now, some of the attacks of the more deadly micro-organisms are being to some extent checked. The unfortunate result is that many who should naturally have died in early youth are kept alive to add to the overcrowding and damage of the social structure. Thus, even in the sense of the forester weeding out the healthy young trees to make more room for the remainder, which may not of necessity be finer specimens, it is a necessary action that has to be done by some means or other. More breathing room has to be provided for those that are left. No, if we are to abolish war, famine, and disease—the time-honoured methods of nature—we must replace them by some methods equally drastic and, to my mind, more repulsive, of limiting overproduction. Willy-nilly, we shall be forced to take thought for the future as well as for our own ease and quiet :



we shall be forced to think of the heritage that we are leaving to our offspring.

To return to war between primitive tribes. How far would it prove beneficial? Normally we may conclude that the victors would suffer less than the defeated; therefore the tribes possessing the braver and stronger, and also, if strategy came in at all, the wiser warriors would survive to a greater extent than would the defeated. Also the fact of victory would give them the possession of larger hunting grounds, or room to graze their flocks and herds: thus they would be able to breed and feed better and more numerous children under more favourable conditions. The possession of the captured women might be another advantage in some cases. However, even without that, the fertility of the victors would be increased as that of the conquered would be diminished. Amongst the victors the superior in strength of body and mind would tend to come to the front more markedly than in times of peace: leaders in war are, of necessity, the best available. It was from this trial by battle that certain families would obtain a claim to leadership. Probably in early times, when there was not such a general diffusion of intellectual qualities, it was easier to observe the transmission of the qualities of leadership from father to son; or it may have been from mother to son, as the matriarchal system of inheritance was the older amongst many races. Observation of this fact of natural history may have easily led to the preference being given to certain families for the position of king or leader in war. Hence may have arisen the practice of hereditary kingship which in modern times has fallen into such disrepute. Our ancestors, whether by accident or not, appear to have acted more according to scientific facts than we have been accustomed to believe. The reason why the transmission of brain power has not been more



frequently observed amongst historical kings and statesmen may possibly have been the way in which their consorts have been chosen ; possibly, also, it may have been due to lack of care in picking out the best of a family. In the descendants of a winning horse there are only a limited number of equally good foals ; a large number have to be discarded as of little value.

There are many reasons why the more warlike nations in the past have been the most successful. That they have been is shown in the history of the Nordic tribes at different times ; the history of the Aryan tribes in India and Persia ; the history of the Greeks and Romans ; and in our own history. Naturally a warlike race have more drive and energy ; conquering their competitors or overaweing them, they come to have a wider field for their activities ; and their energy and pride of achievement are of great use in all the activities of peace. As a nation becomes more peaceful we see a falling off in all the virtues of a virile race ; so it was with the Romans as their armies came to depend more and more on the valour of their auxiliaries. In the case of the Chinese their dislike and contempt of the military profession has led to the long supremacy of the few Manchu tribes who for so long ruled over that great country. The Manchus imposed their own method of dressing the hair in a pigtail, and it is only since the rise of the Republic that they have been able to throw off this badge of slavery. It was with difficulty that this servile habit was discontinued by the vast mass of the people. Since their liberation they have had a succession of civil wars, which have probably made the bulk of the people look back upon the happy time of the Manchu Empire with regret ; that is the sort of thing that you expect after any revolution. Any improvement that may ultimately result is purchased at too high a price.



The humanitarian régime of our countrymen in India, and the resulting peace in place of the continual wars that previously existed, has led to an enormous increase in the population. Famine formerly swept away millions of the people; now, owing to the improvement in communications, whereby food can be quickly transported from regions of plenty to areas where a shortage exists, this natural limitation of the people has been largely swept away. In the future, owing to the natural fertility of the population, there will be a great danger of overcrowding; this can only partly be avoided by recourse to irrigation such as we have seen carried out on such an extensive scale in Scind. On the other hand, if, as seems probable, we are driven from India, and a period of civil wars and religious quarrels follow, there will be this advantage: in spite of its tragedy, it will result in a drastic cutting down of the surplus population.

The excess has striven to find an outlet by migration to the British colonies for some years back; but naturally this has been resented by the races already in occupation, and in the case of South Africa it appears to have been stopped. Gandhi was one of these emigrants to the Cape, and no doubt it was from his experiences here that he found his first early thoughts of resistance to the English. If on the other hand the English should not be driven from India, an interesting problem will face them as to how to keep down this excessive fecundity without having continual outbreaks of famine.

The chronic civil wars and the loss of life in the tremendous floods have reduced the overcrowding in China for the present, but what will happen when a stable government is established? Much the same may be said of Russia, where the loss of many millions in the war, the civil war, and the great famine, and even at the present time, owing to chronic shortage of proper



food, should, you would think, keep the population at a low level for some time to come. If there should be any overcrowding in the time of the present drastic government, that government should be in an excellent position for dealing with it—at least one would imagine so.

Russia has made a serious mistake in throwing away the cream in search of some problematical advantage to the blue milk of the population. Yet, in such a large country, as yet barely civilized, there should be a sufficient basis of sound stock from which, after some delay, to raise an efficient upper and middle class to carry on the affairs of the country. The system of payment by results in the factories, and the tendency almost to beg for men quick-witted enough to act as engineers, managers, and officials, may even act as a better stimulus to the rise of the better fitted to the top than did the older and surer method of natural selection, or free competition. Under the natural method incompetents may often be kept in positions above their natural capacity by family influence, which, although it has its own advantages in preserving the good stocks, may often do so at the expense of a better. Systems of government may often, like scientific experiments, prove successful in spite of having been undertaken from a false theory.

The friend of the Syracusan tyrant advanced, as his idea of an efficient tyranny, the smiting off of the heads of all the taller plants. This should be done so as to make secure the continuation of his own power. But to procure uniformity, even at a low level, this process would have to be continued for more than one season; it would have to be done perennially, and from the point of view of improvement of the plants might be considered as somewhat of a mistake.

Communists should remember that they themselves will unintentionally set up a new aristocracy; as they



will wish to be efficient, and human brains being unequal as they are, they will have to use the best that they can find. The new aristocracy of leading Communists, statesmen, officials, scientists, engineers overseers, and what not, will prove to be less tolerant of their inferiors than the old. An old aristocracy, and in this term we may include the village elders and many others who are not usually considered to be aristocrats, is less likely to be jealous of encroachments on their privileges; and its members, comparing their own standard of life with that of their inferiors, are usually the more sympathetic towards them.

Reading *Humanity Uprooted*, by Maurice Hindus, one is struck by the sacrifice of the country population to that of the cities, nowadays called the proletariat, under the Soviet system. That, however, is exactly what our Liberal statesmen of the last generation did in our own country, and have been doing since they decided to make this country into the workshop of the world. Much the same, only with less excuse, has been done in the United States. Even in this country agriculture is the employment of a larger number of people than are engaged in any other single occupation, and thus at least deserves, from the point of view of general health and the well-being of the community, a little more encouragement than does the less beneficial employment of the factory and mine worker. It is true that people accustomed to the hectic life of the city find that they are unable to live in the country owing to its loneliness. This is one of our troubles when dealing with unemployment: the natural solution of emigration is barred to the city worker; inevitably if taken to a new country he drifts into the towns, where there is no demand for his labour. Yet our ancestors were all country people if you go far enough back. It is said that the population of London used to require renewing from the country



every third generation ; very probably it is not so far from this deplorable position even yet. The abolition of the corn laws was no doubt of great advantage in the establishment of a rich manufacturing country, and enabled the number of people that this country could support to expand with great rapidity ; but was it not rather carried to an extreme ? A small tax on agricultural produce from America and the virgin soil of the West could have done little harm to our industries, and would have preserved a larger and happier population on the land. Possibly this could have been done if we could have been less extreme in our political creeds. People tend to become so fanatical in their politics as well as in their religions. If we condemn war on good grounds, we think it necessary to damn as a blood-thirsty villain anyone who is brave enough to say that war is sometimes better than peace at any price.

As a boy I remember that I wept when taken from my native fells and dales to live in a smoky city. During our lifetime the ordinary English city has been unfit for any human being to live in who had any first-hand knowledge of a better kind of life. In the future, when the use of smokeless fuel becomes more common, they may become more possible. The casualties in the war against bad conditions and disease in the cities used to be, and still are, more numerous than those of any mere military campaign.

The townsman habitually looks down on the countryman as being slower in the uptake, and from a superficial point of view this may be so. He does not have the same opportunities of mixing with all classes of people, or the same facilities for sharpening his wits as the inhabitant of a large town. For all that, when you get to know him, his knowledge of life and death is sounder than that of the city man. From his childhood he is in daily contact with the facts of existence, and sees in the birth, illness, and death of



the farm stock that which is common to all the children of nature. The farmer and his labourer have many crafts at their finger-ends: they learn to build walls, to trim and plant hedges, to dig drains, to plough and till the soil, to gather in the crops from field and orchard, to tend their stock at birth, in health, and illness, to take life when circumstances require it; from all of which they learn, when it comes to their turn to be ill, or to face the stark realities of war, to bear what fate may bring with a greater degree of stoicism and a sterner philosophy than a man not so brought up can possibly have. To be slow in answering some frivolous question is not always a sign of a dull brain; often it is more a sign of a man accustomed to weigh his answer, and of one somewhat diffident and distrustful of the stranger. True, ignorance may be more common in the country; but even that, in these days of the wireless and greater ease of communication, is becoming less of a common fault. The attraction of the city, the poverty of the fields, the hope of adventure in foreign climes, have taken the best blood from the people of the countryside; what remains may often be but the dregs of a good stock; still, where you want the hope of a better race look more in the countryside than in the crowded city.

The health and physique of the English country people has deteriorated in the last century, possibly owing to the drain to the city and the Colonies; largely, I am convinced, owing to the change of diet. Instead of the old-fashioned breakfast of porridge and milk they universally take tea, white bread, bacon and eggs. Too often it is a case of tea at every meal. Hot liquids are not too good for the teeth; possibly the old-fashioned weak beer for breakfast of the gentry was preferable. Tea as a hot liquid causes uneven expansion and cracking of the enamel; in addition it probably coagulates and thus removes the protective



mucus from the surface of the stomach, resulting in that modern curse of indigestion and ulceration of the stomach and duodenum. Possibly it may also interfere with the absorption of iron and vitamins from the food ; at any rate it is a matter of common observation that those who drink tea for breakfast tend to become anæmic and of poor physique and stamina. Coffee is probably much the better. In an old volume of the *Gentleman's Magazine* I noticed an article which mentioned that the average height of the country people in Cumberland and Westmorland was about 5 ft. 10 in., which I should scarcely imagine to be true at the present time.

The modern population, being mainly urban in composition, contains too large a proportion of people who are liable to nervous troubles. The mental strain of town life tends always in the direction of quickness of thought and action, and reflection and steadiness are not so evident as in the country type ; all of which results in the production of a nervous and volatile mentality, which, if there happens to be a strain of nervous trouble in the family, favours the early appearance of hysteria and neurasthenia. On the other hand, in the country the drain of the better types to the towns and Colonies and the tendency to close inbreeding result in making insanity and weak-mindedness commoner in the countryside than it should be. Yet whilst taking this into account the countryman is still superior to the town-bred person. The townsman is more easily thrown off his balance in an emergency, and is more liable to be upset by the sight of blood. In a case of any sudden accident a townsman is more liable to be upset, and may be an actual nuisance.

In the late war the town-bred soldiers proved to be brave and dashing soldiers ; but from what I have observed, the number of men with broken-down



nerves and suffering from shell-shock has been larger amongst them than it should be. Normally the countryman should prove to be the steadier soldier ; brought up from childhood in contact with the sight of sudden death in the slaughter of domestic animals, you would expect them to take the sights of the battlefield with more coolness, and this I believe proved to be the case. Most countrymen have some opportunity for taking part in field sports, even if it be in the humble capacity of a beater in a grouse or pheasant drive ; in consequence they are not so liable to be afflicted with the rabid humanitarianism of so many modern townsmen. The fear of death is one of the more primitive emotions, and was ever present in the minds of our ancestors, as it is in the minds of the lower animals, although, presumably, not so clearly understood by them. Possibly the bull that hates and fears the sight of red has an inherited memory of a time when its remote ancestors rushed to the rescue of their females and young whose red blood they saw staining the snow when attacked by the hungry wolf pack. To our subconscious fear of death is added the terror of conscious knowledge ; and if not moderated by the self-control that reflection of its naturalness and inevitability brings, this is apt to lead to hysterical and unbalanced action and judgment. Such is possibly at the roots of much of the bitterness of the antivivisectionists and other anti-cruelty movements. However, to this must be added the natural combativeness of the party man, who when once he has chosen his standpoint rushes forward blindly in its defence much in the manner of the bull at the sight of red. Enthusiasm of any sort is naturally destructive of any effort to reason and act calmly, especially in an emergency, when reason is much more valuable than excitement.

I have sometimes wondered whether it would not be wise to accustom the young to the early sight of



blood in the slaughter-house, so that when they first see it unexpectedly, as at some period of their lives they are certain to do, they should not be so upset and so lose their presence of mind. Aldous Huxley, in his novel called *This Brave New World*, has something of this nature in his mind when he represents the young workers as being conditioned, as he terms it, by being taken into the hospital where the worn-out are dying. It is an unpleasant idea, and would probably prove very objectionable in reality. A too early acquaintance with death is apt to prove like a too large dose of serum: it is apt to sensitize the recipient, and it is only the subsequent small and often repeated doses that confer immunity. Something of the sort must have happened to me as a boy when I was present at the slaughter of a sheep. It produced a feeling of nausea, and for long I was haunted by the scene in dreams; even at the present time, although thoroughly immunized to the sight of human death in any form, the slaughter of an animal is sure to produce a feeling of nausea and discomfort. If I see a dog run over in the street it produces a much more powerful effect on my nervous system than the worse sight of a similar accident to a human being. Nurses and medical students frequently faint at their first sight of blood, but they soon become immune and bear the sight with the necessary calmness. They do not necessarily become callous, but they become, as they should do, calm and ready to bear their allotted part in the proceedings.

In life we have to grow out of many delicate and painful reactions in the best way in which we are able; we cannot always be prepared for their sudden occurrence by a gradually graded series of accidents, as we might wish. It is an unfortunate fact that a highly civilized existence leaves us in a very sensitive condition towards nervous reactions of all descriptions; and



through inheritance far too many of us fall, owing to the accidents of life, into a nervous state that is, to my mind, much worse than any mere lethal disease. When a man or woman begins to show nervous failure they cease to be the individuals that we have formerly known; in many cases the relatives and medical attendant can hope for nothing better than death, for after all many cases of insanity, and some cases of mere neurasthenia, are little better than cases of living death. I have often thought that in the old days when brutality was the custom rather than the exception in our schools, it must at least have had this good, that it hardened the unfortunate victim; made him less sensitive to the accidents of life; made him think less of his own small troubles; and made his mind so hard that he would not easily fall a victim to neurasthenia and similar diseases of the mind. True, it would not abolish actual insanity; some of its victims actually have been driven into insanity. In those days every boy learned to bear a flogging without unmanly tears, and feared more to show his distress before his fellows than the heaviest blow his teacher could inflict. Now, thanks to the tender hearts of our mothers, we are spared this early suffering that might have saved us from feeling too severely the blows of fate. In the old days when everyone was liable to have to bear a severe surgical operation without the merciful use of chloroform or other anæsthetic, what a good thing it must have been to have learned to bear pain without flinching under the hands of the enraged pedagogue. When you bear pain with self-restraint, I imagine that there is no doubt that the actual damage to the nervous system is less; the actual amount of pain recorded by the nervous system should be less; and the resulting shock must be less. This fortitude taught with such emphasis in our schools must have been on all fours with the training of the North American Indian boy,



who was taught to bear the pain of hot ashes applied to his naked skin before he was considered worthy of the privileges of the warrior. When exposed to the privations and sufferings of savage warfare he would be able to bear them with credit; if he should fall into the hands of his enemies the worst tortures that they could inflict would be unable to wring from him a single groan to disgrace his tribe and manhood. Pain is an alarm bell that tells the governing brain that some part of the body is in difficulties and requires help; surely it has passed its usefulness and become a danger itself when its signals have become so severely felt that they are able to incapacitate the brain from thinking and the body from surviving. Martyrs and fanatics of similar character have been known to bear without injury the most incredible suffering; this is explainable on the grounds that the brain is so capable of being keyed up that it takes no, or little, notice of the violent signals reaching it. People suffering from hysterical conditions, or, under hypnotism, when the mind is strongly concentrated on some idea, may no longer feel pain at all, and needles may be thrust through the arm.

War, then, taken in its wider sense, is universal and inescapable, and no one can altogether escape its evils; from our birth to our death we are always at war with hosts of minute enemies that give no quarter, and are always on the watch to obtain any advantage that may give them admission into the delicate citadel of our bodies. When we go out into the world, what is the competition of our fellows in business but a form of warfare with its own rules; or, when still at school, our games, class work, examinations, and competition with our fellows, but forms of one feature of this universal struggle for survival? The games of children are usually warlike in character and have for their age-long object the training of youth for war, and the



hunt by which our remote ancestors lived. In the hunt you are really waging war on the lower animals which were at one time no lower than were our ancestors.

Are we to teach peace and pacifism to our young in the face of these facts? If so we should be careful to explain the exact point where we draw the line between justifiable and unjustifiable war, or, with the best intentions, we shall be liable to cause confusion in the delicate and susceptible minds of our pupils, and to place there mistaken and dangerous theories of life which may lead to nervous and mental disorders as do our present orthodox religious dogmas, which many, feeling to be incompatible with life as they find it, seek refuge from in delusions and false ideas of all descriptions.

We should teach our youth the art of war, for "Trust in God but keep your powder dry" is still good advice to-day as in the past, and as far as human knowledge goes always will be so. Teach the truth that war between civilized nations is a horrible affair, is wasteful, is often inconclusive, and that compromise and arbitration are more civilized methods of settling differences, and are cheaper, and, if not always satisfactory to both parties, are at least honourable and blameless to both. Strive to choose a good umpire; and when chosen give him a free hand and do not disobey or abuse him should his decision appear to be unreasonable. Cease to teach that nations or individuals should turn the other cheek to the smiter, or that the surest way to secure peace is to disarm; for these things are not true, and truth is more important than religious dogma. To teach a fallacy is to sow distrust in the mind of the pupil; and, if the pupil is too dull-witted to see it, it can only result in the building up of false ideas in his mind. That it is possible for the lamb to lie down with a hungry wolf is the dream of



a poet who had not thought of the impossibility of a wolf existing as a vegetarian.

If there is a design in nature and a God who has designed it, then this is His plan, and not the malevolent whim of some devil. It cannot be denied that whether it was planned deliberately, or whether, as so many think, it rose more or less accidentally, following the normal lines of action of matter that could not plan or think, it hangs together so well that if designed deliberately, you must admit that it was well designed for its purpose, which, we take it, was the populating of the world with those creatures who were the most fitted to survive and to inhabit it to the best advantage to themselves.

It may be argued that they cannot live happily in it when the first clause of their constitution provides that they live one upon another. But then the world is a finite world, and it follows from the nature of the machinery provided that without some mechanism for thinning out the excess there is bound to be overcrowding and unhappiness. Nature, it is said, abhors a vacuum. It may also be said that she abhors waste, so it is provided that the surplus stock shall provide food for the remainder; that the dead and useless shall be devoured by micro-organisms, hyenas, vultures, and so on. This is not what we have been taught in the past by our teachers or religion; here we are considering that which nature points out as being the will of God—things as they are, and not as we should like them to be. This may be somewhat different from our religious teaching in the past, but the scientist should not deny what he thinks to be true—as Peter denied Christ.

Our path to human stature has lain through war and struggle; it is directly opposed to any such plan as that the humble shall inherit the kingdom of heaven. Only very primitive organisms can live on minerals



and gases ; only the lowly beasts of the field can successfully survive on a strictly herbaceous diet. The same God who made the grass of the field also made the lamb to live on it, and the wolf to live and prosper on the flesh and blood of the lamb. To escape the lot of the victim requires constant care and vigilance even in our times ; and as far as can be seen always will do so until this planet ceases to be.

Perhaps the fear of decadency is more pressing than the fear of being devoured ; yet all dangers should be kept in mind and cannot be avoided by burying your head in the sand ; and they should be clearly visualized by our statesmen if the health and safety of our descendants are to be striven for. If you would have health of mind and body, be prepared to wage war against multitudes of enemies, both infinitely small as well as against the more seeming powerful agencies of human warfare, earthquakes, floods, droughts, and famine. We may pray for peace in our time, as we pray for rain or the ceasing of a flood ; but, also, as God helps those who help themselves, let us repair any breach in the dykes and teach our young to shoot straight ; thus only can we obtain a limited security. To retire into a monastery and pray is scarcely to be recommended. Is it still possible to misread the origin and design of life on this earth in the light of all our knowledge ?

The pacifist, and by this I mean the man who preaches non-resistance and unpreparedness for war, because in his opinion any preparation for war is wicked, and of necessity must result in that which it is designed to avert, is the same man who resisted conscription before the late war ; the net result of those activities was to make it certain that we should be dragged into a European war, and that the might of England should be regarded as a thing of little account. The Germans imagined that many of our



politicians would be so pacific that no possible argument would force them to consent to the declaration of war. Fortunately, this was true of only one or two—a bad thing for Germany as it turned out, but it is possible that if our will to fight had been taken at a higher value, the efforts of Sir Edward Grey to maintain peace would have carried more weight.

During the South African War the fear of a European war gradually took possession of the minds of soldiers and statesmen who were watching the evident growth of the belief of the governing classes in Germany that the German military power should be used to obtain the hegemony of Europe. They thought that by this the civilization of Europe could be advanced, the burden of armaments could be diminished, and that through the whole of Europe being under one control the fear of future wars could be minimized: all of which, no doubt, was plausible.

It was obvious to the men who had knowledge that some such idea was being prepared for; what is more, that it had a good chance of being successful. The writings of numerous military and historical authorities were slowly laying the foundations of a public opinion that would back up the carrying out of such a plan. Railways were being extended and sidings made close to the Belgian frontier that could only have some plan of concentrating huge bodies of troops in this position as their reason; and there were papers written by military men pointing out the danger to France of a sudden envelopment of the French left wing by a march through Belgium; but such is the blindness of the majority of men to what stares them in the face: when war actually came, it was found to the astonishment of many who had given thought to the subject that no preparations had been made to meet this danger by the French. Yet, years before, I had heard the opinion expressed by military men that war was coming



between France and Germany, and that in all probability we should be forced in self-defence to take the French side, and that an advance through Belgium was the probable German plan. From the time when I returned to this country at the end of the South African War to the commencement of the late war, the long-spun-out and often-defeated Home Rule project was finally approaching achievement, the idea being to turn enemies into friends by sacrificing the Protestants. It is curious to think that although the greater part of the Protestants of the north were Presbyterians, it was the Nonconformists of Wales and Scotland who formed the most stalwart of the Home Rule party. The Liberal party came to be known as the party of the Nonconformist conscience. It is worthy of remark that boys and men who suffer from a hypertrophy of the conscience are often dangerous friends. At that time Lord Roberts, almost alone, was conducting a quixotic campaign to secure conscription before the deluge. Faced by derision in this aim, he pushed on courageously with efforts to improve the rifles of the soldiers, and to improve their use of this weapon—not without a good deal of success in this. It was scarcely to be expected that he should be able single-handed to carry conscription. Even Chamberlain, who was also afflicted with too clear foresight, was unable to carry Empire Free Trade, and Protection against other countries. His idea was similar to that of Lord Roberts—to prepare for the rainy day by drawing the Empire closer together.

Democracy is not an efficient form of government in times of stress, as the ancient Romans knew ; that is why they had recourse to a dictatorship in exceptionally dangerous times. Aristocracy is a little better than a popular government, but when you have almost universal suffrage the dead weight of ignorance, and self-interested demagogues, and party loyalties, must



be too slow-moving even if it moves in the right direction to be of any use—at any rate in time. We did finally muddle through, as we have often done before, owing to the bravery and self-sacrifice of countless individuals—but at what a cost!

As soon, however, as the immediate danger had passed, the foolish again raised their heads and continued their mistaken propaganda against war; or should I say, their mistaken efforts to render the civilized countries harmless to the less civilized, and less sentimental? Now they were supported by the large number of neurotics whose nerve had been shaken by the conflict. True, the danger was over for the time being, and there was need to slacken sail and to take a breath; but to talk as if war was an impossibility in the future, and that we should take no thought of how to protect our interests, is not the way that men should talk, however suitable it may be for some fanatical Quaker or other religiously-minded person. The leopard does not easily change his spots, and it will be a good time yet before the League of Nations is backed by sufficient strength to keep in check all sudden bursts of local patriotism. Could it restrain Russia, for instance, if her leaders determine to attack Poland, as in all probability they will be tempted to do sooner or later. Could the League of Nations restrain the warring generals in China, or restrain Japan from taking the defence of her nationals and their interests in Manchuria into her own hands? To come nearer home, would it be possible to stop an attack of the fanatical Republican Army in Ireland, on Ulster; would it be possible, except by force of arms, to put a stop to communal warfare between Mohammedans and Hindus in India? Obviously, for generations yet to come, these will be causes of sudden outbreaks of war. These can only be prevented by constant preparation for war on the part of the



rulers of Western Europe. Disarmament conferences under these conditions can only bring the cause of peace into the province of the humorous papers of the Continent.

It is said that modern war will destroy civilization : unpreparedness for war is just as likely to do so. Huge cities will be laid waste and their inhabitants killed in a single night by means of poison gas let loose from a cloud of aeroplanes ; possibly so, but neglecting the means of defence is unlikely to save them. It is quite likely that London may have to experience another attack, which may be much worse than any that it experienced in the late war. If so the loss of life will not be so regrettable as may be the loss of valuable historical, artistic, and scientific objects stored in her museums and record offices. The loss of records when the Four Courts were destroyed in Dublin was bad enough.

The ancient civilizations largely perished at the hands of barbarian invaders ; there is little reason to trust that ours will be exempt. If the possibility of whole cities being laid waste will deter nations from lightly going to war, so much the better—but will it ?

The classical civilizations came to an end owing to war : most English people, however little history they may have read at school, will remember the graphic descriptions of the Anglo-Saxon conquest ; remember that this Romo-British civilization that was then overthrown was more advanced in the arts of peace than any following stage in these islands until the close of the Middle Ages. The Minoan civilization in Crete perished in just this way ; as did the Achaian or Homeric before the attacks of the Dorian invaders ; so did the civilizations of ancient Mesopotamia, Egypt, the Inca Empire in Peru—the most completely socialistic community that the world has yet seen—the Aztec power in Mexico ; and the early Chinese



civilization that was sterilized and stereotyped by the invasions of Tartar tribes. In fact it appears to be the fate of all civilizations to reach a high level of culture, and then, weighed down by their own success in reaching a high peak of material welfare with its enervating results, to sink into decay before the attacks of a more virile and less scrupulous enemy.

There are many signs that may be read on the walls of our own civilization, such as the limiting of the families of the well-to-do, the high standard of living and luxury of the people as a whole, and the fear of war itself.

It appears to be the fate of a civilized stock to become less fertile, and for the dregs of the population to breed them out. The cream of a civilized people are always rising to the top, and any hesitation in breeding freely on their part results in the average intellectual level shrinking; in consequence the former upper classes are replaced by the children of the lower less civilized strata; and the leadership is taken over more and more by men sprung from classes in which owing to the sterner struggle for existence there is a more selfish view of life and its responsibilities; and these newer leaders lack to a large extent that hereditary pride in the history of the state, and the moral code of working for its good, without immediate prospect of reward, which we associate more particularly with the better class of the English public school boy, and which at one time was a marked feature of the better-class Roman people. Without that spirit, which is partly inherited, and perhaps largely acquired from comrades, and the general atmosphere of a school, or a particular class, the Roman government could never have withstood so many shocks, and so well governed its extensive empire for so long; nor could we have given such a good government to the enormous and diverse peoples of India as we have done. A large



number of Cromwell's soldiers were planted on forfeited land in Ireland, and the descendants of these men have distinguished themselves in every important post in the Empire, in every battle which won it, and in every civic post that built up its structure, in a proportion far from justified by their actual numbers. For long they formed the English garrison in Ireland, along with the Protestant minority; but, as so many deserted chapels and churches in the South of Ireland attest, they have been gradually bred out by the more prolific breeding of the poorer and more bigoted Roman Catholic people.

Religion may be taken as a pointer to the mentality of a race; the Latin peoples of the South of Europe are predominantly superstitious and have remained the bulwark of Roman Catholicism; whereas the northern peoples of Nordic stock, with a more self-reliant mentality, have for the most part become Protestant; and, not stopping at any one sect, have split up into the numerous subdivisions which is the distinguishing mark of Protestantism—from one point of view a sign of vitality, from another a cause of weakness. The history of the Protestant sects is a story of the eternal combativeness of the human race over any question in which they are truly interested. Religion has little to do with it, but it does show how little the pacific teaching of Christ has been appreciated by His followers—men will always find something to fight about. Amongst the individuals of the human race there is constant warfare, strife for supremacy, and emulation, and this spirit drives men to achieve the almost impossible—at least what would be impossible without this spirit. It is largely a sexual urge to prove their superiority in the sight of women, and even when this is not evident it may often be the inherited subconscious cause of their quarrelsomeness. What is often called the inferiority complex may really



be at the bottom of a person's touchiness. After the American War of Independence a New Yorker was asked how it came about that he joined the rebel forces, and he is said to have replied that he was jealous of the attraction the red-coat officers had for the women.

This spirit is not often acknowledged as in this case, but no doubt it operates strongly in most revolutionary movements against a ruling or higher class of society. Most men experience a feeling of hate against what they consider the supercilious attitude of the snob, or better placed, especially when young. The female is always open to prefer the man who appears the more able to support a possible family in a better way; this may be subconscious, but it is none the less real because unexpressed.

This fighting spirit is often met with widely separated from any evident sexual basis, as when we see an inventor wasting the best years of his life in trying to perfect some mechanical improvement that is not likely to be of much value to his material welfare. It is truly said that within us lies the real reward of achievement; the pleasure we feel at a task well done. That pleasure is the joy of the hunter who sees, after a long and painful chase, his prey lying dead at his feet; there he sees his daily food, his family's dinner, his own justification in life as a man, a husband, a father. This feeling inherited from a not so far distant past fills us all, though few will know or acknowledge its source. The discoverer who first looks on an unknown sea, the scientist who after patient research at last stumbles on a new fact, the miner who first discovers a vein of gold-bearing reef: they all know this fierce joy—and it is reward enough. If a discoverer of a gold mine were offered as a free gift an equivalent amount of gold, he would find it a poor substitute for his own discovery. That is how we are made, and that



is how we really feel ; here is the real spur to effort that drives us on to do and dare.

In commercial life men are often found working at tasks for which they feel an intense dislike. Their daily task does not satisfy their idealism, or it is not in their vein. Often they have some hobby which is the true focus of their thoughts and ambitions. The schoolboy works languidly at his Latin irregular verbs whilst his thoughts keep wandering to the football field and his hope of there distinguishing himself in the sight of his fellows. How childish—and how manly ! Thus the hunter of old felt when, kept from the chase, he was forced to some feminine task of flint knapping, or nut collecting, or perhaps, later in time, to hoeing and preparing hard soil for the first crop.

In life a man who works for himself is handicapped by being confined to his own efforts and skill ; whereas, a large body of men working under a team system can do much more, owing to the different abilities of each fitting into the pattern of the team ; nevertheless, a man puts forth his best efforts when he works by himself and for himself, alone. How often does the observer notice a casual sort of loyalty to his firm in an employee ? If he falls sick he is slow to return ; he is careless about the small property of the firm, such as notepaper, pens, envelopes, and so on ; if remonstrated with by an outsider, he usually replies that the firm is a big one and that they can well afford it. As a house surgeon I well remember that I had some difficulty in keeping my prescribing within bounds, and that my constant habit was to be more extravagant with dressings than I should have been. A man who works for himself, on the other hand, may be too grasping ; but it is no uncommon event to see him working himself in a way that no-slave driver of an employer would dare to expect. Such a man will struggle through many a small illness, and after a severe complaint will return



to work long before he would if an employee ; his holidays are short and often he deprives himself of them altogether. The bill which brought in accident insurance has caused more sickness than probably any other Act of Parliament ; under this act it is to the benefit of the injured workman to make the most of an accident ; and it is often impossible to cure him under such conditions, at least until the Insurance Company sees fit to buy him off. When he is finally cured he is often unfit for work, except such limited employment as may appeal to him. Owing to the delight in conflict, the people who are drawn into the case are prone to have their code of honesty severely damaged. Owing to this tendency to work better for oneself than for a society, an individualistic country has on the surface great advantages over any socialistic system. The leaders of the Russian Soviets appear to have realized this as they have instituted an elaborate system of payment for piecework in their factories, and offer rewards for particularly well done tasks.

We thus find that the fighting spirit is the most powerful spring of human effort ; and that it is impossible to neglect it. When we come to consider modern war we find horrible conditions that are new to human experience ; but too much stress is laid on this in war books ; we read little about the fighting spirit of the great majority of our men. Talking to such you find that they delight in dwelling on the horrors that they witnessed ; they look back with delight upon their experiences ; and their remembrance of the war has become a delightful episode that they love to dwell upon—distance lends enchantment to the view. Yet when we think on the keen unexplainable pleasure that all men experience when they hook a fish, or bring down an inoffensive bird with a difficult shot ; and how as infants games with soldiers afford the keenest delight ; and as boys how we revelled in tales



of heroism and adventure ; and how, even as elderly men, there is very little in the way of reading that is capable of making us stop up when we should have been in bed like a good detective story ; we begin to realize that there is nothing very mysterious about it after all : it is only mother nature at her million-year-old task of trying to fit her children to face her dangers with courage and success, so that they may not meet with the fate of the weak and incompetent, which is death, and starvation for the women and children dependent on the hunter and warrior. As our ancestors did daily for untold millions of years, so our nature bids us do to-day ; and it would take as many years to eradicate this spirit from the race ; and when this was done we should be a poor lot.

The only thing we can do is to eradicate from the race those whose primitive instincts are unsocial and uncontrolled by an intelligent brain ; this may be done in the future by attempting to breed more from the fit, and by killing or sterilizing those who show marked tendencies to blood lust and uncontrollable bursts of passion. To attempt to teach peace at any price to the young is tampering with the driving power of our nature ; it is too much like attempting to make water flow uphill.



## CHAPTER IV

### THE MECHANISM OF INHERITANCE

THERE are few more interesting chapters in modern science than that which deals with the mechanism of inheritance, the transmission of sex and characteristics by means of the chromosomes, and the mapping out of the position on these chromosomes of the minute genes, or parts of the chromosome which carry each character.

It is not so dangerous in these days as it was in those of Huxley to assert that man is a mammalian animal belonging to the primates or larger apes. He is neither perfect nor altogether brutish; he does not belong to the gods, but he can be claimed to be the highest so far developed of God's creatures on this planet—possibly there may be higher on planets that we know nothing about. Controversies such as the recent Fundamentalist trial in America are more amusing than serious. We shall no doubt hear echoes of this worn-out controversy for many hundreds of years yet to come. If anything, they only show how slowly knowledge sinks into the deeper consciousness of the vast majority of men and women. Anyone with any knowledge of the subject can afford to treat it with the amused tolerance of the grown-up for the prattle of little children. At other times, when we find it held with fanatical belief, we are forced to regard it with sorrow as being on all fours with the deeply-planted false ideas of the actually insane, and as a proof that the brain of man is as yet far from perfect.

To go a little farther back than the primates, research has shown, with the aid of the microscope, that we



are descended from a unicellular organism that found it congenial to live in colonies on the same plan as a bee's nest ; and so we find that it is only in a limited sense that we can call a man a single individual. It would be more correct to regard him as a wonderful collection of minute individuals, each of whom has its own separate existence, birth, and death. All these live together in the most perfect social system that we can possibly conceive, and are thus joined together in one society which resembles a magnified, and much more complex, system than a bee's nest. As in such a nest, all the individuals are the descendants of one male and one female, but the human body differs from such a nest in the method of reproduction : in a bee's nest the whole of the citizens are usually children of the one queen bee, whereas in the human body they are all descended from the fertilized ovum, but go on reproducing themselves by fission of their own substance, and so on indefinitely.

The ovum, when joined by the sperm, forms one cell ; this proceeds to divide, producing four cells, and these each redivide, and so on, until the whole of our complex bodies are produced with their millions of separate cells. These go on living and dying, replacing the worn-out by multiplying by simple asexual fission, in the same manner in which the very simple organisms such as the bacteria and amœbæ still do. Thus is formed that wonderfully complex social system which we come to know as our own body. All these millions of cells work together in a disciplined manner for the good of the whole ; this they continue to do, except perhaps in old age, sometimes under the influence of long-continued irritation, as from the heat of a pipe stem, or certain chemical substances as those contained in certain tar oils, when they are liable to take the bit between their teeth, and may attempt to go on reproducing themselves



without law or order, and so may bring the whole society down in ruin and death.

Some classes of these cells, such as the white blood-corpuscles, retain the power of free locomotion in the manner of their remote ancestors ; still they remain under the rule of the community and work for its protection, as do the police and soldiers of a civilized community.

If we examine a cell under the microscope we see that within the ground-glass-like substance of its body there is a more compact part sharply divided off from the outer part, and this we call the nucleus. This is the directing part of the cell, and it takes the important part in the reproduction of the new cells by division, and of the new individuals at conception. In it is an interlaced network which, when division is about to take place, separates into rods, or more often horse-shoe-shaped bodies, which are seen to thin out and to collect at the centre of a spindle formed from threads of the cell plasm ; splitting along their longitudinal length the two daughter rods, or chromosomes, move apart from the centre towards the two ends of the spindle. It is on these rods that in some way are engraved the commands and directions which govern the whole future life of the cell, its offspring, and so the whole order of development of the future body. Thus we might say that it had a memory, and by this record or memory engraved on the knots, or genes as they are called, of these chromosomes, the future growth of the body is directed ; by a similar record or memory impressed on the chromosomes of the brain-cells our own memory is carried on. So-called instinct in animals is simply a racial memory perpetuated by means of records on the chromosomes, which are passed on by means of faithful copies through thousands of births. It would be better, perhaps, to say that they are not copies but the actual substance which



is passed on. The rods grow thicker and split in two, and so the process is like that of a fire constantly kept alight through the ages.

The records of the method of development which are in some manner carried by these small rods or chromosomes would, if written out, take pages and books to describe; in fact, a text-book of embryological development must be carried by these small bodies. It might be represented to one's own mind as a kind of gramophone record. Such a record is made by a needle which moves in unison with a circular disc to which it is attached, and which is set in vibration by the sound waves in the air. When the record is again revolved you are able to obtain the reverse action: the needle follows the grooves in the disc as it revolves and so sets up similar vibrations in another disc. This vibrating reproduces the original air movements which convey the sound to the drum of the ear. This is no doubt a crude way of explaining the action of the genes on the chromosomes. By genes we mean the small parts of the chromosomes which carry these records, each one carrying a small record for one particular characteristic. Whatever the action of this mechanism, the reality must be even more wonderful than the suggested gramophone record.

As in the birth of the new individual these chromosomes pass on, more or less unchanged, each rod dividing longitudinally, half going to each half of the dividing cell and conveying to each an exact copy of all the rules and regulations as to the behaviour of itself and offspring under all sorts of conditions and development, we can visualize the transmission of the rules for the growth and inheritance which the new person will in the course of time exhibit, such as the colour of his eyes, hair, character, and even mannerisms. Thus sometimes the son has been observed to



carry his stick in the same manner in which his father did, although the son may never even have seen his father.

It would have been difficult to work out all this if we had only the human chromosome to work on, as these are very small, and, in addition, owing to there being such a large number of them in the human cell—as many as forty-eight. Fortunately some of the smaller creatures have as few as four pairs, as in *Drosophila*, whilst in the ascaris worms there are only two large ones.

Until quite recently the characteristics of the male were supposed to be conveyed by the lack of balance in the chromosomes caused by the male having one less sexual character chromosome than the female. This is now known to be a mistake, as most animals have a small or defective chromosome which represents this missing full-sized one. Still the principle appears to be the same, namely, lack of balance, as this small chromosome appears to be only capable of conveying the character of sex—that is, male sex—whilst the ordinary full-sized one conveys quite a number of characteristics in addition to that of female sex. The male thus produces two kinds of sexual cells in equal numbers, one kind containing the normal number, whilst the others have one very small one. These sperm or male sexual cells, when they unite with an ovum—which always contains the full number—if they themselves have the full number, form a female; on the other hand, if they have one missing, or one minute chromosome to represent it, they form a male. Every cell in the body contains an equal number of chromosomes derived from the father and an equal number derived from the mother; the only exception being in the case of the sexual cells—that is, the ovum and sperm—when they are fully mature and ready for union with a cell from the opposite



sex. In this case they only contain half of the normal number, and the rods may have come from either parent, only there is always one from each pair of chromosomes. In the human being, for instance, there are twenty-four pairs of chromosomes, and in the sperm or ovum before union there is one from each of these pairs: whether the one that is chosen comes from the father or mother is accidental. In the normal cell, then, there are so many pairs of chromosomes, and these are usually of the same size and appearance as each other, although those belonging to different pairs may show considerable difference; such pairs are called homologous chromosomes. The only pair which may normally differ are the two sexual chromosomes, which in the case of the male consist of one normal-sized and one small chromosome. The small one coming from the father and the large one from the mother, this latter one coming from the mother may have come originally either from the grandfather or grandmother.

The theory has been advanced that the well-known comparative weakness of the male embryo is due to the defective chromosome. It is also said that the majority of deaths of the embryo before and after birth are males, and probably due to the male having a defective chromosome. More males are said to be conceived owing to the greater slimness of the male sperm, with its one small-sized chromosome, compared with the fatter female sperm with its full complement of normal-sized ones, giving it an advantage in its race to the ovum.

From a study of this mechanism it has been possible to explain the handing on of certain hereditary diseases through the female which only become active in the male; because only then does the full-sized chromosome derived from the female act unrestrained by a corresponding one from the father. In the case of



the female the disease-bearing rod may be present, but its action will be restrained by the healthy rod derived from the male, and through him from his mother. Thus, if a colour-blind man marries a normal woman, the offspring will appear to be normal: the boys are normal and unable to transmit the disease, or to contract it afterwards. The reason is that, unlike the girls, they have only one full-sized sexual chromosome and that is derived from the healthy mother. The girls, on the other hand, have two full-sized sex chromosomes, one taken from the healthy mother and the other from the diseased father; in consequence, although they remain free from the disease owing to the one healthy chromosome keeping in check its unhealthy partner, when they in their turn come to marry and their two sex chromosomes separate to enter two new cells, the one into which the disease-bearing chromosome enters, if it happens to be fertilized by a sperm cell which bears a small male chromosome, will grow up into a man who will be colour blind, the disease-bearing full-sized chromosome now having no healthy equal to restrain its evil action. On the average, then, such a girl will have half her male children colour blind; half of her female children will be carriers. If one of these carrier daughters marries a colour-blind man, half of her sons will be colour blind and half will be normal; of her daughters half will be colour blind and half will be carriers—no boy carrier is possible. Thus colour-blind women are rarer than colour-blind men, as two factors are required to make a woman colour blind, whilst only one is required to make her brother so. Naturally, as there are many more chromosomes than sex character bearing ones, there are many more hereditary characteristics and diseases that are borne by these other chromosomes: the sex-linked defects and diseases are only an interesting class by themselves. The



best-known sex-linked diseases are colour blindness, some congenital eye diseases, deaf-mutism, and hæmophilia.

The sexual cells are separated off from the ordinary tissue cells very early on in foetal development, and can be traced in sections of the embryonic child, or fœtus, whilst it is still very small. Life is handed on from individual to individual by means of these sexual cells. The continuity of body substance, or protoplasm, thus remains unbroken ; so, if you have any children, your actual tissue substance goes on living after your death. Truly much of it dies, but so does the greater portion of it whilst you still live. Life is thus like a fire kept alight by the vestal virgins of Rome, constantly in course of renewal and never quite dying out. Life may thus be considered as being immortal as long as any of your descendants carry any of the protoplasm that has passed through your body. The fact that your protoplasm becomes mixed with that from other families forms the mystery of sexual reproduction. The life itself is continuous ; what happens at death is the throwing off of a lot of worn-out tissue cells and, from the personal point of view, the death of your brain, which, however, if you have lived long enough, is already more or less in a worn-out and dying condition from senile decay and can no longer be regarded as the same efficient and wide-awake king of your body which it was in your youth and early manhood. At any rate, we have to die and so make room for younger and healthier people ; and, if we have lived to a respectable old age, we have done more than have the vast majority of our school-fellows, who have mostly fallen out on the road of life. It is no use to kick against the pricks, but we can find some comfort in leaving a healthy family to carry on the story that is engraved on our chromosomes.

It may be asked, "What is the use of all this



elaborate sexual mechanism? Why cannot we go on reproducing ourselves as the simpler organisms do, such as bacilli, amœbæ, and some of the protozoa?" It has been suggested that sexual reproduction is necessary for the continuous production of new types and so of evolution itself. Against which it may be advanced that bacilli are apt to change their characteristics with as much, if not greater, rapidity than sexually reproduced animals and plants. The trypanosomes, for instance, of sleeping sickness change their character when exposed to a dose of an arsenical drug which just fails to kill them all, as the remainder develop a greater resistance to the drug and may be made almost immune to even large doses by exposure to a succession of sublethal doses in this way. The malarial parasite may be made resistant to quinine in the same way. Cultures of the same organism are well known to vary in virulence according to the soil on which they have been bred, and so on. On the other hand, it is natural to suppose that a race of animals whose protoplasm is mixed by sexual reproduction would tend to remain more stable; as it were, they will keep in better touch with each other. Thus, if anything, it should have the result of making changes in the nature of the breed slower, and more widely diffused over the whole tribe.

An obscure Austrian priest, named Mendel, was the first to lay the corner stone of the study of heredity on firm foundations. As is often the case with important advances in knowledge, he was slightly before his time, and his original paper scarcely attracted any attention until many years after his death, when attention was drawn to it by two writers at the same time. Since then his work has received the honour that we should have wished that it should have received whilst he was still alive. The true scientist must often work for his own satisfaction rather than



for any acknowledgement or pecuniary reward that he is likely to receive. This Austrian priest in his peaceful garden occupied his leisure hours in crossing different varieties of peas. As in many other cases, science and civilization owe much to the hobbies of men of the leisured classes; and perhaps the result of making all men work equally hard for their living would have a very injurious effect on the advance of civilization in cutting out this time for reflection and study. So Mendel, choosing those peas which showed constancy of type over long periods, found that if he crossed two varieties showing the characteristics in the one case of A, and in the other case of B, the resulting crop would show the character A exclusively. If he then crossed the second generation he found that there resulted, numerically, a crop which bore an algebraical ratio of the two varieties. It was as if  $A + B$  multiplied by  $A + B = A^2 + 2AB + B^2$ : that is to say, the number of A character-bearing peas was equal to the number of B character-bearing ones, and in addition there were a number of hybrids similar in character to the first generation, taking the dominant character A, which by recrossing could be made to produce the A's and B's and the hybrids as in the second generation.

From this it follows that the characters must be handed on in small indivisible packets; this we now know is due to their being carried on the little rod-like bodies which we call chromosomes.

These rods pass over from the old to the new person without change, but are mixed afresh at every birth. As the whole of the new individual is formed by the division and redivision of the cells which contain these rods, and in these fissions the rods split along their longitudinal length, and not in a selection of a whole rod from each pair as in the reduction division of the sexual cells, it follows that every cell in our



body contains copies or descendants of the original chromosomes that the first cell formed by the union of the male sperm and the female ovum contained when the new individual was commenced. So it comes about that every cell in our bodies comes to contain those commands impressed on its chromosomes that govern the growth of the body to maturity.

This to the non-technical reader may appear to be somewhat complex, but should be easily followed. When a germ or sexual cell is about to unite with one from the opposite sex, there are only half of the usual number of chromosomes; this is brought about by what is called the reduction division. First in preparing for the act of fertilization the various chromosomes pair out, although previously lying at random in the substance of the nucleus. Each selects the corresponding rod that comes originally from the opposite parent to that from which itself comes. This will carry the various orders as to colour, shape, and so on that it itself carries, although naturally they may be opposing directions; also they will lie at the same level of the rod, so that when they lie together in pairing, each command as to the different characters that the two rods carry will lie against each other. These chromosomes that thus pair out, one from each parent of the individual that owns the body in which they lie, have descended with little change through the ages; as they divide longitudinally by fission each remains an exact copy of its parent. Speaking loosely, it is the same chromosome that has passed, now in a sperm, and now in an ovum, through thousands of births—altering, it is true, a little from time to time as it has developed new characters for the improvement, or the deterioration, of the individuals in the shaping of whose destinies it has taken such an important part.



In those insects and other small creatures which have only a few chromosomes, the different rods can be easily distinguished and can be seen to vary in size. In the fruit fly—*Drosophila melanogaster*—there are four pairs : one large couple which carry a large group of linked characters, including the characters of the female sex (in the male this is represented by only a small and one normal chromosome), one couple of moderately large rods which carry a corresponding linked group of characters, and one couple which only carries a very small number of characters, the other couple being a little larger than these very small rods and carrying a similar small number of linked characters.

In the act of synapsis, or pairing, they lie very close to one another and even twine round each other ; in this way pieces are apt to be taken from one chromosome to the other. Sometimes they get broken off and then unite to the other end of the chromosome or to the wrong one. In this way the resulting creature may show considerable changes from normal, and if the change is too great it may prove fatal ; if not so extreme, it may only cause a small change which may prove either beneficial or the reverse. From a study of these changes in *Drosophila* the situation on the different chromosomes of the various genes or character-bearing parts has been mapped out with considerable accuracy. By the effects of X rays on the living insect, damage of this character has been brought about, and has so proved useful in the study of the position of the genes. Changes in single genes may occur spontaneously without the chromosome having been damaged, so that it is possible to understand to some extent how it is that, in the course of time, considerable changes may be brought about in the character of plants and animals : such changes are termed mutations.



After this intimate embrace, one from each pair of chromosomes passes into one of the new nuclei formed by the division: here, instead of an ordinary division which results in the formation of two new cells with a full complement of chromosomes, you have a division which leaves the two new cells with only one from each couple. This one may be from either the father or the mother, as they enter the new cell according to their accidental position; only, two similar or homologous chromosomes never enter the same cell: they appear mutually to repel each other. Two ordinary divisions now take place, but only one cell remains in the egg, the others being thrown off as the so-called polar bodies: the final egg cell as well as the polar bodies only containing one from each homologous chromosome, as was settled by the reduction division. The final cell chosen for fertilization has been collecting nutritive material from before the time of the reduction: this material is required for the early development of the ovum. In the case of the male you have the reduction division as in the female and then two ordinary divisions, in which the chromosomes split up longitudinally. Instead of the surplus cells being discarded, they all form spores; so as you had two cells after the reduction division, one containing the full-sized female sex chromosome and the other the small male sex chromosome, you will now have different sperms produced in equal quantity. The cells form the ripe sperm by the chromosomes passing forward into the head, and the cell plasm forming the long tail. When a sperm meets with an egg it bores into the outer covering of the latter; the tail drops off, and the head imbibes plasm from the egg substance and so swells up to the normal size of a nucleus, which then unites with the nucleus of the egg. The nucleus now contains a full complement of chromosomes, as the half which were lost at the reduction



division are now replaced by a complete set of chromosomes, each of which will find a homologous chromosome to which it provides a sort of balance.

We see from this that each ovum and sperm contains one from each pair of homologous chromosomes, but that there is a mixing up owing to some that come from the original father and some from the original mother entering the same cell at the reduction division ; the only strict rule is that each new cell shall contain one from each pair of homologous chromosomes.

From this we are able to explain how it is that when Mendel mated a tall pea with a dwarf pea, in the second generation he obtained the same number of tall and dwarf peas with an equal number of hybrids, these appearing to be the same as the tall peas, owing to dominance, but when recrossed amongst themselves again producing an equal number of dominant tall and recessive dwarfs and an equal number of hybrids.

In the second generation of a cross between yellow and green seeds he obtained 6022 yellows and 2001 greens, which is very close to a three-to-one ratio—the yellows being more numerous as they contained the hybrids, the green in their composition being hidden by the dominance of the yellow containing chromosome, but coming out in a certain proportion of their offspring when it happened that they were freed from the dominance of the other colour. The pure dominants and pure recessives, when bred dominant with dominant, produce only the dominant colour, and when recessive with recessive, only the recessive colour. Mendel thus saw that the characters must be handed on in indivisible bundles, which he called genes : peas were either round or wrinkled, tall or dwarf, yellow or green. When you get intermediate types it is due to there being more than one factor required to produce the required result. In the cross



between the white and black races there are more than two factors at work ; these are carried on more than one pair of homologous chromosomes, so that in the same family you will have children of many different shades—some being almost completely black, whilst others are almost white.

As a matter of fact, the hybrid even in the case of two opposing factors, is not always strictly the colour of the dominant—as when a white-flowered four o'clock is crossed with a red-flowered type the offspring are pink. In these cases the recessive is strong enough to affect slightly the resulting colour.

In the di-hybrid ratio we have the result which would occur if the factors for any tall and dwarf were distributed separately from those for yellow and green. The first generation will show the dominant characters of the two opposed characters : that is, they will be composed of tall plants with yellow seeds. The second generation is composed of several kinds of plants settled by the possible combinations of the sex cells of the first generation. Of a pair of opposite characters it is only possible for the sex cells to have the one. You may have, then, tall yellow and tall green, dwarf yellow and dwarf green. The appearance of tall dwarf and yellow green is absent on the principle of the purity of the gametes for contrasted characters. Each of these four cells may meet and unite with any of the four others, so that there are sixteen possible combinations.

If we make the obvious assumption that the distinguishing factor for any one character is carried by a particular chromosome, and that in synapsis, or the junction of the two chromosomes in the maturation division, each of these pairing chromosomes comes originally from a different parent to its fellow, and are thus from different sexes, we can see that their following separation is a means for keeping them unmixed.



In a cross between a tall green and a dwarf yellow, the factors for green and yellow will be carried in homologous chromosomes that will pair in synapsis, and similarly the factors for tallness and dwarfness are carried in another pair whose behaviour is quite uninfluenced by that of the first pair; then we see that it is impossible for the factors for green and yellow to get into the same sexual cell, and the same for the factors of tallness and dwarfness. The tall factor may get into a cell with the factor for green or the one for yellow, but not into one with the factor for dwarfism, and the same for any other opposing factors carried by homologous chromosomes.

In the fruit fly—*Drosophila melanogaster*—there are over 400 Mendelian characters, and only four pairs of chromosomes; each chromosome must, therefore, carry many hereditary factors. So the factors being in groups, we should expect that the inheritance would be in groups also. Characters that tend to be inherited in groups are said to be linked, and in *Drosophila* there are just four linkage groups, or one for each pair of chromosomes. There is one large group associated with sex, and these we judge are carried by the large female sex chromosome; there are also two fairly large groups carried by the large second and third chromosomes, and one very small group of only four characters carried, no doubt, by the small fourth rod.

Albinism is an example of a recessive characteristic which occasionally crops up in man as in other animals. Human albinos you recognize by the exaggeratedly fair hair, almost white, and the white eyelashes. You may have albinos appearing amongst negroes, when the appearance is very striking. Owing to some accident or alteration, usually called a mutation, you get the creation of a gene with this character. Being a recessive characteristic, it will produce no effect until its possessor meets in marriage with another individual



also carrying a similar defective colour factor; then some of the children are likely to be pure albinos. According to the Mendelian ratio there will be three normal to one albino amongst the children, that is if there are a sufficient number of children to give the rule a chance of being operative. There will also be two of the normals who will each carry a defective gene for colour.

An albino is handicapped to some extent by his condition as, owing to the absence of colour in his iris, too much light will fall on his retina. In other respects, also, he appears to be a little bit on the delicate side. Of strictly dominant mutations the most striking in man is brachydactyly. It consists in a shortening of the toes and fingers. When a man who suffers from this peculiarity marries a normal woman, half of her children will be short-fingered and half will be normal. The normals never transmit the character. No pure dominants are known. Probably when a short-fingered woman marries a short-fingered man all the children who have two affected rods die before birth, as in the case of other severe alterations in the genes. Such pure dominants that cause death in the embryo are said to be lethal.

Individuals who display a very rare dominant character usually possess the defective gene on one chromosome only. As a result of this, half of their children will inherit the defect, or quality, and half will be normal, provided they marry a normal person. The best-known dominant characteristics are: brachydactyly, aniridia, a variety of night blindness, Huntington's chorea, diabetes insipidus, and lobster claw.

The recessive genes are not so easily recognized, but the group that are present on the X chromosome are easily recognized from the fact that the defect is shown more frequently in men who have only the one X, or sex chromosome; as a recessive it does not show



itself in the female, who has two. Red-green colour-blind males are about ten times more numerous than colour-blind females.

The blood reactions in the human being may enable great progress to be made in the future in mapping out the position of the different genes on the human chromosome. Human blood can be divided into four groups according to whether it clots, or not, when added to blood from a known group. These four blood groups depend on three genes—one being a recessive, another a dominant, a third depends on the presence of a second dominant, and a fourth blood group depends on the presence of both dominants. The two dominant genes have risen in the course of time from the same recessive gene; hence it is impossible for them to be present at the same time on the same gene, but they can be present in the same cell on the two homologous genes—that is, the one may come from the father and the other from the mother. The four blood groups are: (I) Serum of this group does not agglutinate corpuscles from any other group; corpuscles are agglutinated by serums from *Groups II, III, and IV*. (II) The serum of this group agglutinates corpuscles of *Groups I and III*; the corpuscles are clumped, or agglutinated, by serums from *Groups III and IV*. (III) The serum of this group agglutinates corpuscles of *Groups I and II*; the corpuscles are agglutinated by serum from *Groups II and IV*. (IV) The serum of this group agglutinates corpuscles of *Groups I, II, and III*. The corpuscles are not agglutinated by serum of any group. When specimens of blood from known *Groups II and III* are available any other specimen may be classified. In this way a donor belonging to the same group as the recipient may be selected. Reactions of the human blood with the blood of other animals depend on genes carried on other chromosomes. So in this way



a map of the different chromosomes may be worked out by testing the blood reactions of all people who have striking hereditary defects, such as amaurotic idiocy, night blindness, and so on. In this way it will be possible to observe whether the genes responsible for them are present on the same chromosome as the genes of the blood groups, or on some other chromosome. In this way after a long time it may be possible to devise tests for each of the twenty-four pairs of chromosomes.

There is a substance called phenyl-thiourea which a quarter of the population are incapable of tasting—they are taste-blind to it. Those who are able to taste it describe it as intensely bitter. The ability to recognize this substance is dependent on a single recessive gene, and about as many possess this gene as those who don't. This is according to Mendel's Law; as the population contains about equal numbers of people who do not carry the special gene and people who do, it will be common for these opposites to marry, so in the second generation you will get  $A^2 + 2AB + B^2$ . If A represents two individuals without the gene, and B two with the gene, then according to the formula you get four people who do not carry it, and who cannot taste this substance, and eight individuals who carry the gene but who are unable to taste phenyl-thiourea, and four individuals who not only carry the gene but are able to taste it. Therefore on the average there will be in the population equal numbers of people with and without the gene, but the numbers who can taste it will be only one quarter of the whole. Possibly the sense of music taste may be a similar gene; as we know, large numbers of people have no appreciation for music. Those who do can recognize and recall any simple tune with ease, whilst others appear to have no knowledge of what they are missing in life in not being able



to enjoy this gift of nature. The Jews are particularly musical, as are many families, so it appears to be an inherited faculty.

Evidently it is not necessary to sterilize every individual who shows one of these defective genes, but some certainly require drastic control. How far it may be necessary to go requires a good deal of consideration and more definite knowledge; but that a lot requires to be done both in endeavouring to breed an actually superior man and in assisting nature in getting rid of a large number of defective human beings, I should imagine is well enough established.

An interesting dispute in inheritance has been the bitter controversy as to the inheritance of acquired characteristics. The experiment has even been tried of cutting off the tails of rats for many generations, in the hope that they might ultimately breed without tails. This appears to be a little bit unnecessary, as it is well known that little Jew babies have had their foreskins removed when a week old for many thousands of generations without its having any effect on the covering or protective sheath. I have seen a Jew baby born without a foreskin: that was a case of hypospadias, which is a similar thing to hare-lip, only in a different position—certainly not due in any way to the religious circumcision. White people do not become black after several generations of life in a hot climate, and so on. We know that a recessive character can remain in a plant for hundreds of generations without altering its character: these are commonplace facts. There are, however, a few facts that may make you doubt the absolute certainty of the rule. We know that simple organisms that are not sexual alter according to the medium on which they grow; for instance, if you grow an organism on an unfavourable medium, you weaken it if you do not stop its growth altogether. Grown on a favourable medium it becomes



more virulent. The trypanosome of African sleeping sickness can be grown in a medium which is just short of killing all the individuals ; these can then be transferred to a more deadly solution and will prove able to live in what would have originally killed them all. The human body may be gradually immunized to the attacks of different organisms by small attacks, and this protective gain does not always appear to be completely lost by the descendants. This may be explained by the susceptible dying out, and so on, but the gain does often appear to be too rapid for this alone. There is also McDougall's experiment with rats, when over many generations he put them into a tank of water with two passages for escape. The runway which was lighted gave the rats an electric shock ; the other was unlighted but free from an electric charge. In the thirteenth generation of rats there were about 75 errors per rat ; the best rat made 30 mistakes. At the twenty-third generation there were 25 errors per rat, and the best rat made only 3 mistakes. So there was a gradual increase of quickness in avoiding the well-lighted but painful runway.

It is possible that, although it is rare or difficult for the environment to alter the inheritance in the higher class of organisms, it may be that it is not altogether without effect. If we consider that in lowly organisms the sexual cells may be very similar to the nerve cells, and thus may take part in the government of the whole body, so in the higher animals they may, in a way, be similar in their receptivity of impressions to the brain cells, and so store up a memory of situations which may be transmitted to their offspring. At any rate, the mechanism of nerve-supply should be able to transmit impressions to the ovary and sperm cells before they are ripe for fertilization as easily as to the brain cells ; and just as we learn to avoid personal



injury through our brain memory, why should we not learn in an elementary manner, perhaps, from a similar race memory? Nevertheless, the Mendelian theory of heredity is fully satisfied by the assumption that sudden changes in the genes are the common and usual methods of evolution.

Weissman, who was the first great exponent of the theory that acquired characters could never be inherited, believed that the sexual cells were quite isolated from the influence of the ordinary cells of the body, and this became the foundation of his opposition to the theory of the inheritance of acquired characters.

Another point worth mentioning in heredity is that you must distinguish between characteristics that are due to environment and those that are due to the genes. The latter are inherited, and changes are due to alterations in the genes themselves, however they may occur, whilst those due to environment, such as larger size in a wheat grain, may be due to its position on the stalk enabling it to obtain more nourishment or a larger share of sunlight. As a result you cannot always obtain a heavier yield of wheat by crossing the larger grains; you will have to pick out those seeds which come from plants which habitually on the average yield a larger sized grain. We all know that size runs in families, but that it does not follow that every tall man and woman when mated will have equally tall children.

Another point is that in the breeding of relatives you obtain so many recessives meeting together that the offspring are usually weaker, and the whole family may die out as a result. If, however, the inbreeding is continued long enough, most of these recessives may be bred out by only selecting the strong, who have more dominants in their chromosomes. This may be a difficult thing in the human race, who have so many chromosomes, many of which carry recessives that may



prove more or less harmful. In a breeding experiment it is necessary to interbreed the strain until it is pure, before drawing conclusions.

We see, then, that there is a very exact and beautiful mechanism at work in inheritance; and we can imagine how it is that the race instinct or memory is transmitted to the brain of the new individual, so that even when freshly born he may be able more quickly to find his feet under circumstances quite fresh to him as an individual, but not to his chromosomes—or, in other words, to his race.

Most animals, even man himself, have an extensive race memory which is in action as soon as the new individual is born. Many insects, indeed, appear always to work by instinct; that is to say, they work by this inherited race memory and not by an individual memory freshly acquired by each new member of the race. Some insects sting their prey very accurately in the neighbourhood of one of the motor ganglia, so that the creature is rendered helpless and can be dragged into the nest and left helpless with the eggs of its attacker; when the eggs develop they are provided with living meat to feed on. The young, when they have finished their provisions, are able to foray forth and to seek their own sustenance with no teacher to direct them as to their actions. Under these circumstances the individual brain comes to occupy a minor position; sometimes, indeed, it seems as if the insect had very little volition outside this inherited memory, and was, in consequence, somewhat helpless when faced with new conditions quite outside the experience of the tribe.

In early prehistoric times family succession went through the female, or, as it was called, a matriarchal system of inheritance was fashionable. In those times the influence of the male may not have been so well understood, and, when often the real father may have



been in doubt, the descent through the mother would appear to be the one thing certain and beyond dispute. The influence of the cult of the mother goddess, or earth goddess as she is often termed, who was believed to have so much to do with the fertility of the herds and the success of the crops, must be taken into account. This form of religion appears to have been very widely spread, and was far from being confined to Asia Minor, as is proved by the numerous clay and ivory images that have been found in Southern Europe.

This matriarchal system was found in early times amongst the Picts in Scotland and probably in the pre-Celtic Irish tribes, and was only given up in comparatively modern times when the Crown of Scotland passed into the hands of the Irish Scots, who had only recently colonized the Western Highlands. So, also, in early times it was the common method of Egyptian inheritance. Afterwards the male came to usurp this female prerogative as the older royal families were displaced by successful fighting chiefs, who did not always relish marrying the heiress of the family that they had displaced.

In these early times the transmission of hereditary genius for leadership may have been more easily visualized than in later times, when such a high level of mental ability had been more widely diffused amongst the population. In later times the doctrine of the equality of man may have blinded the intelligent to the essential importance of this passage of brain through hereditary inheritance; perhaps the male succession having replaced the female in the public eye may have had something to do with it. The influence of the mother on her offspring has been too much overshadowed by our dwelling too much on the family tree as drawn on the male side to the neglect of the female. Amongst race horses and stock generally, the importance of the sire consists in the easy way in



which his qualities can be transmitted, as compared with the difficulty of rearing a large family to one female; it pays better to kill off unwanted males than it does to neglect the possibilities of the inferior female. One good bull or ram can quickly influence the form of a whole herd or flock, whereas the influence of one good female is of much more limited usefulness, even if her power of natural transmission is slightly greater than that of the male, which has often been doubted.

In the case of the future breeding of man it appears to be at least of as much importance to select the mothers as carefully as the fathers.

In youth the brain is like a fair page on which much can be written; but, even then, is it quite empty? Has not already much been written on it that, almost effaced, still lends it the more ready for certain impressions to take a deeper impress than others for which it has not been so prepared. Instinct is not a prominent feature of the human infant; still it is there. The newly-born child grasps a finger placed within its grasp with surprising force; this, possibly, may be an instinct inherited from far distant ancestors, to whom it was a necessity of life to hang on to the hairy maternal breast whilst she passed from branch to branch of the primeval forest. Some infants appear to have almost lost the instinct to suck, but I have never heard anyone doubt that the ordinary healthy infant should exhibit such an instinct. Later on we find that a little girl will play with her doll, whilst the brother soon shows a preference for a bow and arrow, a wooden sword, soldiers, engines, and mechanical toys, which he delights in pulling to pieces in order to see how they work. The little girl will play at keeping house, at stitching and sewing; whilst the boy will constantly play at games that obviously have for their object the training of eye, hand, and brain, for the



manly necessity of hunting and fighting. This instinct is very strong in most healthy boys, and if they do not show it I should be inclined to look askance at their general health, as also at their mental capacity and sharpness of brain reactions generally.

As a boy grows older this tendency to delight in fighting and hunting games gradually grows weaker, but it persists in most healthy men well on into old age, in spite of humanitarian tendencies derived from thought and teaching. Before our breakfast we do not, nowadays, have to hunt and kill our prey, cut its throat to let out the surplus blood, skin and disembowel it, cut it up, and bear the pieces home to our admiring family; yet this is what our not so very remote ancestors had to do, day after day. How many townsmen would starve to death before they could learn to do all this? How many of his excessive humanitarian scruples would have to undergo modification? Still, even yet, the inherited knowledge that the killing of our prey is one of our most important duties is deeply engraved on the chromosomes which dictate our mental and bodily activities. In all sport we have a proof of this inherited delight in hunting and strife, in the risk of sudden death or maiming, and in the delight in success in any game that has an element of risk attached to it. The enthusiasm of the inventor that sends a glow through his brain and body is but another form of this primeval delight. How keen and inexplicable is the pleasure of the fisherman in hooking an innocent trout, or the gunman in bringing down a high-flying bird. No longer does the very life of our selves and family depend on this skill of the hunter, but it is safe to prophesy that it will only die out when our race comes to an end.

Cases of blood lust in quite young children are undoubtedly due to this inherited delight—gone wrong, it may be, for some reason or other. In later years,



if the mental control is weakened through some change in the brain cells, it may again make itself a danger to the community. Normally, however, this delight in hunting and dangers escaped goes along with exceptionally well-developed mental powers and is a proof of health and vitality rather than the opposite. A man who never experiences a thrill in the reading of romances of war and hunting is either a poor specimen, or he has suffered from some early suppression of his natural impulses that can hardly have left him altogether unaffected for the worse. Healthy natural tastes are nearly always found in men with genuinely healthy minds and, as you may add, with healthy bodies.

There has been much argument about men with bad health and poor physique often showing exceptional genius; but this is what should be expected, as their weakness naturally drives them to excell in the less strenuous physical exertions, and so drives them to devote more of their energy to mental exertion. This may be a good thing for the weak individual, but can scarcely be a matter of congratulation for the well-wisher of the future physique and mental sharpness of the race. A healthy mind in a healthy body is what we must strive for, all other ideals being subservient to this. Weak nerves, neurasthenia, timidity, and mental instability are the natural result of any bad balance between the physical and mental development of the body. These mental instabilities are a greater danger to the health and future happiness of the race than are any other ills to which our flesh may be heir. Who does not know the misfortune of having a relative in his family with some mental irritability or weakness in his temperament? We might rationally excuse a man of strong mind who, when tempted, committed a murder. It might pay in the long run to leave him at large, but it can never pay to allow a



man with a diseased mind to remain alive who does the same thing ; it must always be to the advantage of the community to get rid of him as quickly and painlessly as possible. It is to the advantage of the future that mental disease be wiped out whenever possible ; and I deny the idea that life detention in an asylum is more humane than a quick death. However, it is revolting to think of hanging a man for a crime which he has done after an attack of epilepsy, for instance ; yet, for the sake of argument, it appears to be justifiable, particularly if he could be put to death in his sleep without any mental torture. Many criminals should be hanged in any case : to plead insanity is to bring forward an additional reason for his removal. Amongst rational people no objection could be raised to the painless killing of a good many hopeless lunatics. Their lives are a curse to themselves and a danger and drag on their relatives and the community at large. Sterilization is a cruel half-measure at best. Something like that will, no doubt, be undertaken in the future ; the increase in insanity, owing to the heavy tax on the mental side of life due to the age we live in, and the casual breeding and protection of the unfit that goes on at present, looks like making this into an urgent problem for our successors.



## CHAPTER V

### DISEASE AND INHERITANCE

SOME diseases are directly inherited through the defects in the chromosomes leading to a vicious development ; such are congenital cataract, colour blindness, and many other diseases which are inherited in the same manner as are the colour of the eyes or hair. Many other diseases that tend to run in families are not directly inherited in this manner ; what happens is that some weakness, or lack of resistance to the attacks of certain micro-organisms, is inherited. Often the defect consists in a failure to develop the specific anti-toxin that is required for defence against a special enemy : such appears to be the case in the well-known weakness of certain families and races to the attacks of the tubercle bacillus. In mental disease it may be an instability of some of the brain cells, or a liability to an early degeneration or old age of certain of the important cells of the frontal convolutions. Some children are born with defective brains : these may be inherited, but a larger number are due to accidents at birth. Some of these birth injuries are due to an inherited smallness of the mother's pelvis. I have heard it advanced in argument that if Cæsarean section were commonly used to effect delivery, in time there might be produced a race of people in whom it would be the usual method of birth, and the natural method would be impossible.

During long ages men have acquired an ability to resist most of the enemies to which he has been exposed in his long history ; but there are new diseases which crop up from time to time to which he has never yet been effectively exposed ; these for long periods are



liable to prove very serious indeed. Diseases such as bubonic plague, cholera, influenza, only occasionally visit Europe in an epidemic form, but when they do they are apt to prove deadly to most people owing to such rich virgin soil that has no resistance to their attacks lying ready for them. Then again the effect of some diseases is to produce only a short immunity : one severe attack appears to predispose to another within a comparatively short period, as influenza often does. No doubt after a family has been exposed to the disease for a long period a sufficient amount of resistance may be acquired to protect them over their whole lives ; but very few people have as yet obtained such a lasting protection, yet many after a series of attacks, gradually getting weaker, do seem to obtain an immunity for a very long period. Even poisons, such as alcohol and opium, are more dangerous when freshly introduced into a country, and afterwards grow less dangerous as the more susceptible individuals grow fewer, as they do in the course of time. The fact that alcohol and opium tend to make a race grow less susceptible to their evil effects in the course of time is still disputed, but the evidence that they do so appears to be sufficiently strong.

Lately it has been shown that if a growth of the trypanosome, which causes the sleeping sickness of Africa, is treated with a dose of an organic compound of arsenic which is just sufficiently strong to kill the greater number without actually killing them all, and the survivors are allowed to grow up until they are again numerous in the culture, and they are then treated with a larger dose, which would have been sufficient to kill the whole of the original culture, fewer of them will be killed, and those that remain will prove even more tolerant of a larger dose still ; so in this way a breed of the little worm-like bodies may be bred which will tolerate exceedingly large doses :



they are then said to be arsenic-fast. This explains the fact that had been suspected for a long time, that these drugs in order to effect a cure should be given in the largest possible dose at the very first attempt, as later doses were likely to prove less and less effective. Quinine proves to be ineffective after repeated doses, in the same way, in curing malaria. The organisms that are left after the first few doses are the more resistant ones ; and as these are able to transmit their power of resistance to their offspring, you gradually obtain a strain that no practicable dose will be able to wipe out completely.

As the late Archdall Reid pointed out some years ago, the different races of mankind become immune to the effects of alcohol in much the same way. Those peoples who have long been exposed to the free use of alcohol are the least likely to suffer from its abuse. The Jews and Southern Europeans who have lived long in countries where wine is habitually used as the common means of relieving thirst, very rarely suffer from alcoholism or dipsomania. By dipsomania is meant that craving for alcohol which drives the victim to indulgence in spite of all the ill effects which he knows must follow ; when he is unable to obtain whisky he will drink some noxious form of it, such as methylated spirits ; he is liable to sell the very bed on which he lies to obtain it ; sacrifices his children and wife to his craving ; and, unless restrained, speedily dies from acute alcoholic poisoning. Less severe cases drink to such an extent that they rapidly impair their mental power, and reduce their families to a condition of abject poverty. It is this sort of thing that is so rare in the wine countries, and so common in the regions where alcohol has until modern times been an expensive luxury. Those peoples who have had free access for many generations to copious supplies of alcohol, drink to satisfy thirst, to gratify their liking



for a pleasant wine which pleases their palate ; they drink it slowly so as to obtain fully its taste and aroma, whilst a drunkard will gulp his glass and call hastily for more. The one ceases to drink before his palate becomes cloyed by the excessive amount ; but the other goes on drinking to obtain the effect of mental exaltation followed by stupor that results from excessive drinking. A moderate drinker is able to stop when he feels that he has had sufficient ; a drunkard is unable to restrain himself and must go on as long as he is able to obtain it or to swallow it. In spite of the social stigma attached to excessive indulgence, and to the hardships which his action is bringing on himself and family, he is quite unable to restrain himself, and the sooner he dies the better for society and his dependants.

At one time our people were so drunken that it was common to see, outside alehouses, notices that you could here "get drunk for a penny, and dead drunk for twopence." We hear of the Vikings getting so drunk that they were little better than beasts after their feasts ; and alcohol must have been a difficult thing to obtain in any quantity in those days. Tacitus says of the northern barbarians, that they were easier to conquer with the aid of wine than by force of arms. There are many stories of the drinking bouts of the ancients in Homer and other historians ; the Bible is full of stories of intemperance ; but the modern Greeks and Jews are remarkable for the temperate use of wine ; yet, amongst the Jews, at the celebration of Purim it is considered a meritorious and religious duty to drink, and drunkenness would be excused as a sign of piety and not considered as a mark of disgrace. In spite of this religious duty it would excite astonishment rather than disgust amongst the congregation of the Synagogue if anyone should indulge beyond his sense of what were good for him. Doctors who have had large



practices amongst the Jews have never had to treat a Jew for delirium tremens, or known one to injure his health by undue indulgence ; but one and all have had an extensive practice in the treatment of alcoholism amongst Christians.

The attraction of copious supplies of wine is said to have been one of the causes of the frequent invasions of Italy by the barbarians. Living in the north of Europe, in small country settlements, with no large towns, the home-made mead would be made with a good deal of trouble by the frugal housewife and her women ; naturally under these conditions the mistress would dole it out willingly only when the occasion appeared to excuse or demand its use, as after some special event, such as a guest night, the return of the warriors from the hunt, from battle, or a voyage, funeral, or festival. At other times it would be doled out to the heated workers in the field, or in case of illness or accident. These northern women appear to have had a good deal of influence and were mistresses in their own homes. They were not the non-entities that women have sometimes been under more civilized conditions ; naturally they tended to be careful in the use of a drink that was difficult to make. Honey was rare, and crops of barley would be small, and as a food substance it would have other uses than the making of an agreeable drink that their menfolk were liable to use immoderately. When they came into southern lands they found that wine could be had for the asking ; small wineshops were everywhere ready to supply the wants of the poorest customer. In the same way in our own country the home-made beer made by the housewife came to be replaced by the copious supplies of the brewery and distillery.

When the Celtic women learned how to make or to distil a potent spirit that would revive the fainting and exhausted, or set the blood coursing through the blue



limbs of the half drowned, they not unnaturally came to call it the water of life—in Celtic, *Usquebaugh*, whence we get our own term of whisky; the French term is similar in its meaning—*Eau de Vie*. As regards *Usk*, which means water, some of our rivers still bear this name; in the same way some rivers are called *Avon*, which is the Celtic *Afon*, meaning river, the other, or original name, having been lost. The same sort of thing appears to be happening to the name for a pass, which in Welsh is *Bulch*; as between *Mold* and *Ruthen* the startled traveller is able to see that the pass on the new road is termed on a signboard *Bulch Pass*.

Our temperance people might be excused if they termed whisky the water of death, as indeed it has proved to many. He who is seized with the irresistible appetite for it, which was formerly so common, speedily reduces himself and family to abject poverty, and speedily dies; and his family, reduced to poverty, either perishes or remains submerged in its depths. Those of the family who have not inherited the appetite may, in the course of time, rise to the surface; those members who have inherited it sink still further, until finally they die out as nature intends. We have, here, the action of a drug similar to that of the organic arsenic compound, bound in course of time to render the members of the race that survive alcohol-fast or immune to its more harmful effects. Failing to destroy the whole brood, the more resistant survive and reproduce themselves with more resistance added for every generation that successfully passes the test.

Respectable women are loath to marry a drunkard, so he may never marry. If he has recourse to prostitutes, as his kind so commonly do, he is not very likely to transmit many children to an unsympathetic world. If he has married, many of his children may die from the bad conditions inseparable from poverty;



the survivors living under poor conditions will only be able to rise if they are free from their parent's taint. Thus we see that through the ages there must have been a constant rising to the surface of the more temperate, and a sinking down to the bottom of the intemperate—all of which is very desirable for the future welfare of the race. Under a natural condition of society we are thus able to see that nature in time will constantly raise to the surface those best fitted to survive, and will breed a better race of mankind, as she does in the case of any other animal. It is like the rising of cream to the surface in a jug of standing milk. But how shall we replace this beneficial action of nature when all our social legislation, directed by the usual ignorant humanitarian, is striving to perpetuate the unfit at the expense of the fit who have already risen by their own exertions? In course of time, then, a drunken nation will inevitably tend to become more sober, provided no artificial hindrance is placed in the way of natural selection.

As you travel from north to south you pass from the more drunken peoples to the more sober, and then as you pass still farther south you will again meet with peoples who are very susceptible, as in the greater part of Africa, and in many of the islands of the Pacific, where alcohol has been unknown until the arrival of the white man. Some of these native races are also sober, as they too have been able to pass through the hard apprenticeship of its use through their discovery and use of native wines, such as the palm wine of the west coast of Africa. Nevertheless many native races are so easily overcome by dipsomania that very drastic laws have been passed by their white rulers to prevent their having access to this deadly poison. Whether it would not be wiser in the long run to allow them to have their fling, and so to allow nature to purge the tribes of the weak, so that



in the future they might be allowed to consult their taste with impunity—is a question that should be considered.

That dipsomania does run in families most people will be ready to admit; that it tends to die out requires a longer period of observation; but a study of its effects on the few families that most medical men have an opportunity of studying appears to bear out this theory, derived from historical records. How often do we observe that a hard-working medical man of Scotch or Irish peasant descent leaves a family with one or more members hopelessly addicted to drink. Only those families appear to be moderately safe who have lived under good conditions for many generations, and even then a drinking tendency may now and again crop up, either through a cast-back or through a marriage into the family of some newly risen merchant. It is true that in the families of drunkards the sons may have had such a sickening experience of its evil that they may throughout their lifetime never touch alcohol, and thus may remain sober in spite of an inherited tendency; but in this case the danger, although skilfully avoided by careful navigation, is still there and liable to break out in their descendants. As so many colonists have had to migrate owing to their drunken habits at home, we should expect that there would tend to be a larger number of those liable to excess amongst colonials and Americans than amongst their fellow countrymen who have remained at home; the behaviour of many Americans when allowed access to free supplies of alcohol may perhaps bear this out. Another fact in favour of the hereditary transmission of alcoholism would be the often observed case that when the father and mother are both addicted to alcohol the tendency for it to show itself in their descendants is increased.



Races are even able to develop a large amount of immunity to the habitual use of such drugs as opium ; this is shown by the comparative harmlessness of the common use of opium in India, as opposed to its devastating effects on the Burmese, who have not been acquainted with, or at least have not had free supplies of, this drug. The Chinese are intermediate in this respect between the Indians, who have cultivated opium for many hundreds of years, and the Burmese, who have only lately acquired the free use of the drug. To the majority of the Chinese it has proved to be a source of danger and destruction, yet even now it is said that large numbers in many of the provinces habitually use it without any severe deterioration or lessening of their efficiency, and without their self-control becoming so dominated by the craving that they are not able to give up its use without great danger.

If you should ask, then, whether I would advocate the free supply of alcohol and opium to all the native races, I should have to reply that it is one thing to believe in a theory and quite another to have the courage to carry it into effect. Still, I take it that it is better for our descendants to be able to use these drugs with moderation, and not to be so liable to kill themselves with them, than it is for us to protect ourselves from their harmfulness by drastic measures which may spare us suffering at the expense of the future. These medicinal drugs are of great use when properly used, and without them the physician would be very helpless. Thus they are, and must be, in constant use, freely manufactured, and, in the case of alcohol at any rate, very easy for anyone to manufacture or to obtain, even if prohibited. Is it not best for the future of the human race that weaknesses of any description should be allowed to eliminate those who are unfortunate enough to possess them, rather



than that their descendants should always live under the dread of their becoming manifest in their own children? So it is perhaps better to admit that it is better for weak people and weak races to be allowed to eliminate themselves as quickly and efficiently as possible, rather than to protect them at the expense of the liberty of the strong. If inferior races are to be permitted to survive and to breed out the better, then it is advantageous that these inferior races should be purged of their weaker members as quickly as possible, so as to give their better members an opportunity to survive and so to increase the well-being and to raise the average of the whole.

The North American Indians have disappeared before the white race, and that is, it will be admitted, an historical fact that has been for the benefit of humanity. Yet at the same time the story of the dealings of the Whites with the Redmen is not one that we can read without some shame and sympathy with the underdog. In many respects the Redmen were not a degenerate race by any means; on the whole they were a fine race, and of good mental capacity. It could not be truly said that the only good Indian was a dead one.

There were other diseases besides alcohol that played a powerful part in the destruction of the Redmen, but the underlying factor was the same, that is, the lack of resistance to a new enemy. The more powerful actual agents were smallpox, venereal diseases, measles, tuberculosis, and other diseases introduced at the same time. Given time, the Indians would have developed sufficient immunity to enable them to survive, as those tribes in the more tropical parts of the continent were able to do. At the present time Indians and Negroes tend to die out when compelled to live in the crowded cities of the north; if, on the other hand, they are forced to live a good deal of their time in the open



air and sunshine of the south, they survive and multiply.

Micro-organisms, it must be remembered, are also evolving greater powers of attack as the food they live on becomes more resistant. Thus we are faced with the possibility of diseases becoming more virulent; even of their developing new forms of attack, and thus of the appearance of new forms of disease. Such may be the case in the recent appearance of encephalitis lethargica since the war.

Some diseases such as bubonic plague have their place of origin and constant residence in the crowded cities of China, and only rarely sweep across Europe in fatal epidemics, which, fortunately, soon use up the food which is available, although in the course of history they have been known to wipe out the whole populations of towns and districts. Influenza periodically acquires a terrible deadliness, and when it has done so proves as fatal in the tropics as in its more usual home in the damp and colder northerly regions.

Yellow fever is more or less constantly present amongst the natives of the Gold Coast, and passes as a rule amongst them as a mild affection, only deadly to the migrant white. The natives of the west coast of Africa appear to be more or less immune to a good many other tropical diseases, amongst which may be considered trypanosomiasis; but when this disease came to spread across Africa in the track of the newly opened trade routes, it very nearly annihilated the entire population of Uganda. Malaria and leprosy were at one time common in this country, and why they are not so at the present time is still a cause of controversy. All the enemies that we are accustomed to, having killed off the very susceptible, and having left the less susceptible, find themselves opposed by a more and more resistant community, and so become less and less malignant, as you see at the close of an



epidemic, when the organisms appear as if they were exhausted. This, as I have said above, does not always follow, for remaining amongst the community they may at any time break out again with an increased virulency.

Scarlet fever shows very well the way in which the malignancy of a disease may vary. When first described it was considered to be a very mild disease of children ; later it became so very malignant that it killed a very large percentage of those attacked and its infectivity became such that articles of clothing are said to have conveyed the disease even after the lapse of years : normally the infection is only conveyed by the breath. Now again it appears to be reverting to the very mild type of the disease, and its death-rate is less than that of measles. At the time of its great severity, Dr. Haygarth, of Chester, introduced isolation wards for its segregation and treatment ; and it has been thought that the isolation of all the severer cases has led to the survival of a milder type. Rheumatic fever, which used to be a common cause of heart disease when I was a student, is now seldom met with in its severer forms. Possibly the drastic treatment with large doses of salicylates may have had the effect of largely limiting its transfer from patient to patient. Certainly it is a much less frequent cause of disease than formerly. Consumption, or tubercle, is essentially a disease of sunless regions, where the population live cooped up in sunless rooms for a considerable portion of the year.

Wild animals in captivity have shown an increased resistance to tubercle when the ordinary glass of the Zoo has been replaced by Vita glass which allows a larger percentage of the ultra-violet rays from the sun to penetrate to their living quarters. As has been discovered of late years the ultra-violet rays of the sun have the power to convert ergasterol, which is present in the skin, into vitamin D, and this is known to be very



essential for health, particularly in growing animals. Amongst other duties it assists in the better calcification of the teeth ; also it tends to cure rickets, and, along with vitamin A raises the vitality of the body and its resistance to disease. Celluloid, along with Vita glass, has also the faculty of transmitting the ultra-violet rays of the sun. During the war, when the price of glass was prohibitive, the windows of a large factory, when broken, were repaired with celluloid, and this resulted in the health of the munition workers being greatly improved. This is one reason why, other things being equal, it is better to ride in an open car than in an enclosed saloon ; another reason for such a preference might be given in the less liability to carbon monoxide poisoning in an open motor.

As the skin of the Negro is heavily pigmented so as to prevent his being injured by the excess of ultra-violet rays in the glare of the tropics, it is easy to understand that he suffers from a poverty of vitamin D when transferred to the sunless north : hence his greater liability to tubercle under these conditions. Cod-liver oil has for long been recognized as of great help in tubercle, and the reason is that it is rich in vitamins D and A.

The Welsh and Manx are very liable to severe tubercular infections : possibly it may be due to their having lived for generations in more or less isolated valleys, where they would be seldom exposed to infection. Nowadays when so many of their daughters have gone into domestic service in the large towns, and communications have so greatly improved, it is not to be wondered at that those diseases such as tubercle, to which they have not been greatly exposed in the past, have taken a heavy toll of their younger people. The Welsh are essentially of Iberian stock, as Tacitus remarked in the time of Agricola ; that is, they are a small, wiry, dark-complexioned, and long-headed



people; now it may be supposed that these peoples who originally came from the warmer south, where they bordered on the Negro race, have like this race a weakness towards infection by tubercle. The same may be possibly true of the similar Manx and Kerry peoples. Still, the theory that they have not as yet been tried in the fire, and that the dross has not been burned out of them to the same extent as amongst the English, is, all things considered, the more plausible.

Disease throughout the ages has played an important part in the decay of Empires. Greece and Roman Italy alike suffered from the depopulation of large areas owing to malaria, which began to be a terrible scourge as the Roman Empire passed the prime of its power. Another cause of this depopulation would be the periodical outbreaks of bubonic plague, introduced from the East.

We have already seen how the existence of North America as a Whiteman's country has been facilitated by the lack of protection present in the blood of the North American Indian to the various diseases brought over by the intruding Whites. Wells, in his *War of the Worlds*, represents the conquering Martians as being overwhelmed in their turn by the minute organisms which are present in this world, and against which the intruders proved to have no protection at all.

At the present time the United States and South Africa are faced with the problem of the increasing Negro population, and the various causes of friction and injustice which such a condition of affairs renders unavoidable. In both cases the trouble has been brought about by the foolishness of the original settlers in making and importing slaves in their efforts to obtain cheap labour. In America the Indians died out before the Whiteman, and left the country free for a superior race. In South Africa much the same conditions prevailed, the population being of a very weak type, and



very sparsely present in the lands near the Cape. In both cases the advantage was largely thrown away owing to the lack of foresight in the employment of slaves. If the settlers in South Africa had remorselessly driven out the Hottentots and Bushmen whom they met, and then refrained from making or importing slaves, they would have made South Africa into a true Whiteman's land—a consummation which appears to be very difficult to achieve at this late date. When the English Government, impelled by humanitarian motives, declared the emancipation of the slaves, there was naturally great dissatisfaction; much of the money given in compensation went into the pockets of the wrong people; and like all sudden changes it caused a great dislocation in the economy of the countryside and much unhappiness. Many, rather than endure the rule of such harsh governors and unjust rulers, preferred to trek away into the wilds; thus were laid the seeds of two costly wars, and much bitterness between two closely related races who could easily have coalesced to their mutual advantage.

The White Australians are well advised in the light of these facts in doing their best to keep their country a preserve for a pure European race; even if in the future the condition of their half populated land should bring war to their threshold from the teeming populations of Eastern Asia.

A well-known professor in the United States some time ago advanced the startling theory that a free intermarriage should take place between Whites and Blacks as the only solution for the problem in that country. According to him, such a solution will be the only way of producing a condition of permanent peace, and the true brotherhood of man. On the face of it, such a solution is impracticable. You cannot reverse natural laws so easily as that. The one aim of nature is to produce new races. If the Boer and



the Englishman will not coalesce in South Africa, and the Roman Catholic and the Protestant in Ireland, and the Jew and the Teuton in Germany, it is not very probable that the White will very easily unite on fair terms with the Negro. The racial antipathy of the Whites to the Negro may appear to the observer as a strange phenomenon ; especially is this so when we hear of Negroes being burned at the stake for attacks on white women, and for much less offensive peccadillos ; but we must take things as we find them, and not imagine that we can get rid of them by saying that such things should not be. If a Scotchman may often say that he dislikes Englishmen, and may carry his love of his nationality to absurd lengths—as even we English are apt to do—then surely it is understandable when there is such a gulf between the races as there is between the White and Black. This is not an artificial or trivial dislike, it is in accordance with a deeply ingrained feeling that we see at work in the whole animal kingdom. It is due to this law that different breeds of animals have been able to develop away from one another. If it had been to their liking always to crossbreed, no advance towards the differentiation of species would have been possible, save in the exceptional case where large mountain masses intervened, or arms of the sea, or deep rivers, were present. As a matter of common observation, there is no doubt that a preference for like to breed with like exists amongst all known creatures, even when the difference is not very marked. As a result it is easy for nature to keep more or less pure her newer varieties, as a man does when he breeds new varieties of domestic animals. The critic may here remark about the ease with which Whitemen have interbred with Negroes, the ease with which dogs interbreed, the way in which the various varieties of pigeons are liable to breed back to the original rock pigeon when allowed to



mate freely. Nevertheless these are not typical cases. They only illustrate the fact that the urge to breed is stronger than the natural barrier of dislike to an unlike mate amongst many types ; but they do not prove that, allowed freer opportunities of finding a more suitable mate, the choice would not have been different. Nature usually acts on very broad rules, and often allows very large exceptions. The different varieties of butterflies usually breed only amongst their own kinds, yet the males which usually chase the females sometimes suffer from an impairment of their natural discrimination, and sometimes will be seen to dart at the wrong species, or even at a piece of fluff or feather floating in the air. According to Major Hingston, in his *Problems of Instinct and Intelligence*, a male of the Meadow Brown butterflies has been seen in union with a female Ringlet, and a female of the Chalk Hill Blue has been taken in union with a male of the Common Blue. These are to be considered as aberrations, or perhaps as due to the starvation of the sexual instinct. Granted, then, some exceptions, it is a strict rule of nature that unions should take place within the species, and that the preference should be given to those most nearly allied in appearance, accent, and manner. The refusal to cross must have preserved many species from complete obliteration. Animals under artificial conditions will naturally do many strange things, such as eating their own young. Mankind may often be looked on as an animal under an analogous condition to confinement ; as for dogs and pigeons, their varieties have come about through the action of man, and not from their own natural tendency, which may make a difference.

Even amongst mankind we see, at the present time, disinclination to free marriage between different sections of the people, as is illustrated by the common saying about marrying in your own class. Amongst the Jews this amounts to intolerance, and the young



Jew who dares to marry a Gentile will meet with the opposition and ostracism of his family and people. The same is true of the Roman Catholics, although not of quite the same nature, the question of race not openly entering into the objection. Amongst the Jews, at any rate those of the stricter kind, you will find the son who has ventured to marry a Gentile disowned by his family; if he has formed an illicit union, it is true you will not find the same strong opposition; if he marries a Jewess, subsequently, little notice may be taken of it, even if he may keep up his connection with the Gentile. The result of all this is to make the Jews a nation within a nation, wherever they may dwell. This accounts for a good deal of the anti-semitism of which we have seen a deplorable manifestation within recent times; I have even heard Cromwell blamed for allowing the re-entry of the Jews into this country. In India marriage between the different castes is almost unknown, such is the social disability that is attached to any such treachery to the established order.

In Spain, before the Mohammedan invasion, the ruling Goths would not tolerate any marriage between the Goths and Romans: the natives were called Romans, and so no doubt considered themselves, having been a Roman province for so long. The Latin dialect they spoke has since developed into Spanish; this was spoken all over Spain with the exception of the north-west, where Basque was spoken, as it is to this day. This may have been the original Iberian tongue, and a somewhat similar tongue may possibly have been spoken in these islands before the advent of the Gaels, who spoke an Aryan tongue similar to Sanskrit, Greek, Roman, and Anglo-Saxon, and most of the other tongues of Europe.

Everywhere we see this dislike to marriage outside the tribe, sect, caste, and in mountainous countries



outside the valley or canton. This well-known tendency to excessive intermarriage in small valleys is blamed for the presence of certain types of mental weakness in such communities. Given any boundary difficult to pass and you at once have the commencement of a race. Take Ireland for an example: the people are by descent very similar to any other section of people in the British Isles; they are composed of a substratum of Iberian, with an overlay of Nordic; the latter having first come in with the Gaels, who probably came by way of Scotland; another wave followed in the Norse Vikings; as these were followed by the Norman, English, Welsh, and some Flemmings, at the Conquest. Without any trace of an accent you may often be able to pick out an Irishman at the present day by certain peculiarities of physique and temperament. It is obvious that nature is rapidly building up a new race that has little connection with the mixture of races from which it originates. The fussy attempt of her politicians to make her people racially self-conscious is not really necessary, as it is a fact that is present in any case, and is a simple part of nature's mechanism for creating new races and for keeping them more or less separate.

In mankind the inheritance of mental sharpness and mental defects is outstandingly important. That these are really inherited is within the bounds of observation of most of us. If you care to take the trouble you will find many instances of inherited genius both in the pages of history and amongst your own acquaintances. In one of his essays, Dean Inge draws a very instructive chart of his own family tree. The great Darwin had a good mental history on both sides, as he was descended from the Wedgwood family on his mother's side, and his own father and grandfather were of exceptional mental capacity. The Chair of Anatomy at Edinburgh University was held for several generations by a very



distinguished family of teachers. The French family of Chamberlen, that first discovered the midwifery forceps, and kept it a family secret for several generations, must have been an outstanding example of this transmission of mental acumen. Any general practitioner of any age will be able to recall amongst his patients transmission of mental traits and peculiarities, and it is not necessary to labour an obvious fact.

The opposite, or inheritance of mental weak-mindedness, is equally well established. The typical case that is quoted in all the books on the subject is that of an American woman, called Ada Jukes, a pauper, born in 1740, who died from alcoholism in 1800; 7 descendants were convicted of murder and punished accordingly, 76 others were convicted of minor crimes, 144 were beggars by profession, 64 others were cared for by various public charities, and, finally, 181 were prostitutes. The sum total spent by the government on the maintenance, surveillance, and prosecutions of the members of this family amounted to over £1,150,000.

The inheritance of mental disease is a fact that stares us in the face, and we are all acquainted with such cases. Of all inherited diseases this variety is the most painful and injurious to the family and the race. The fact that in many families with such a mental history cases of exceptional genius often run parallel with the cases of disease only makes it the more distressing.

Some diseases, such as congenital syphilis, are due to the infection of the tissues of the child directly from the mother's blood-stream during the period in the womb when the child gets its nutriment and oxygen, and gets rid of its waste products, directly by osmosis through the delicate membrane that alone separates its own blood from that of the mother in the maternal blood sinus in the placenta. So these diseases are not truly hereditary. Whether any hereditary resistance to syphilis is transmitted has been disputed ;



yet there should be if the body is able to put up any resistance at all. Judging from my own observations in practice I am quite convinced that a certain amount of resistance is so transmitted, but this is rarely or never sufficient to prevent infection ; it is shown more in the mildness of the disease in certain families.

Diabetes is a disease in which there is often a marked hereditary tendency. I have met with several families in which there have been several cases, usually in the male members. Possibly it may be a disease resembling hæmophilia and conveyed by the sex chromosome in some varieties. Diabetes varies according to the actual defect which may be present. In pernicious anæmia we have a disease where there is some defect in the production of some substance which is necessary for the growth of the red blood-corpuscles ; and this defect runs very frequently in families. When the stomach contents of members of such families are examined it is usually found that not only are the stomachs of those who are actually affected deficient in hydrochloric acid, but that in several of the other members of the family who are not affected is this deficiency to be found. Thus the liability to develop pernicious anæmia is more widely present in a family than the mere presence of one or two cases would lead you to think.

In the *British Medical Journal* a few years back there was an interesting history recorded of a family who suffered from a habit of regurgitating their food and chewing it again. Now there is a large class of animals who regularly do this, called ruminants ; it is a time-saving device. As animals that have to live on grass, and have a large body to support, have to spend a good deal of their time cropping it, it is a great convenience to be able to collect it as rapidly as possible and to store it in that secondary stomach which is provided for this purpose. This is called the rumen, or paunch ; when resting from their labours they



bring it back into the mouth and grind it up or chew the cud, which would have interfered with their business of cropping it if undertaken immediately. Human beings have never had any ancestors who did this, so to develop a habit of this nature and to transmit it through several generations is much the more surprising.

A peculiar hereditary disease is that called ichthyosis, in which the skin resembles that of a fish; in severe cases it may be more like a crocodile's skin. This is undoubtedly an hereditary condition, although babies are not usually born with it, but develop it when they are some months old. When born suffering from it they nearly always die, either because the skin is so thick around the mouth that they have a difficulty in suckling, or the peculiar nature of the skin interferes with perspiration and other functions of the skin to such an extent as to render them unable to survive. Those babies that do live, and those in whom it comes on later in life, appear to suffer little from this peculiarity, although when once established it is persistent, and remains throughout the whole life of the individual in spite of any treatment that may be attempted.

Perhaps the most strikingly hereditary defects are those of the eye, and a paper in the *British Medical Journal*, by Dr. Myles Bickerton, has recently called attention to their importance. The defective colour in the iris of albinos has been already mentioned. Myopia, or short sight, is usually a family complaint, and Dr. Bickerton gives a chart showing sex-linked myopia taken from Worth. He quotes Wilson, who found that in 100 families with one myopic parent there were 200 myopic children and 250 normal; whilst in 91 families with neither parent myopic, 100 children were myopic and 300 normal. In high myopia you frequently have detachment of the retina; this is found as a dominant, a recessive, or a male-sex-linked feature in



different pedigrees. Astigmatism, hypermetropia, or long sight, and squint, are inherited in the same manner. Microphthalmia, or small eye, with in extreme cases actual disease of one or both eyes, has been found as a dominant, recessive, or recessive sex-linked, in different pedigrees. Nearly 4 per cent of all blindness is due to hereditarily determined atrophy of the retina. The condition begins in early youth and progresses to complete blindness about the age of forty. This disease is known as retinitis pigmentosa, and the commonest form is a recessive ; thus it either results from the marriage of relatives, or from two people who both happen to carry the recessive factor. It is sometimes linked with hereditary deafness.

Hereditary optic nerve atrophy usually affects males, and about 1000 pedigrees have been collected. It comes on at different ages, usually about twenty. Diminution of vision is the chief symptom, and it usually remains stationary after about six months. Aniridia, or absence of the iris, usually resulting in almost complete blindness, is an hereditary affection, and a case is reported where one blind man with this affection had 13 children all suffering from the complaint ; 61 grandchildren out of 63 suffered from it, and 30 great-grandchildren out of 42. Congenital cataract is very important, as 13 per cent of the pupils of blind schools are said to suffer from this hereditary complaint. It is usually a dominant. Ectopia lentis, or congenital displacement of the lens, has been traced as a dominant through six generations. In glaucoma there is often an hereditary factor present, and it may rise early in life as juvenile glaucoma. Blue sclerotics is a condition in which the coat of the eye is thin and too transparent. It is often associated with brittle bones, and with a type of deafness due to otosclerosis, or a fibrous change in the bones of the ear. It is most often found in the female, and is usually transmitted



by this sex ; usually it is a dominant. Glioma is a malignant growth of the nerve elements of the eye, and occurs in infants. In 25 per cent of the cases it affects both eyes, and they have to be removed to save the life of the child.

Dr. Bickerton remarks that the law which forces us to withhold a painless death, or euthanasia, in these cases, is barbarous, monstrously inhuman, and, in his opinion, indefensible.

Maculo-cerebral degeneration includes several conditions such as amaurotic family idiocy. Commencing from five to seven the children become blind in about two years and mentally degenerate within the next two. Night blindness is due to a defect in the rods of the retina. The sight is normal in the daylight, but the sufferers are blind after dusk. It is a dominant condition, although there is a recessive sex linked type associated with myopia.

He sums up by the following suggestions :—

1. Constructive birth control to avoid overcrowding and poverty.
2. Sterilization of mental defectives (and possibly certain criminals), as in America.
3. Review of the obsolete and ancient abortion laws, seventy years old. They are no longer effective and are acting dysgenically. Abortion should act as a second line of defence to conception control, as in Russia.
4. Euthanasia for infants with gross defects to be available for parents who wish to make use of it.
5. Segregation of the mentally defective is difficult owing to the cost ; some 300,000 are now at large.
6. The Catholics recommend control of marriage for the mentally defective, but this does not prevent illegitimacy.
7. The Wassermann test for syphilitic infection before or during pregnancy. This is done in Roumania before marriage.



## CHAPTER VI

### THE MATERNAL APPETITE

FROM the earliest known times the sight of a mother with her child appears to have attracted the sentiment and imagination of man. Early representations of Isis, with her child, Horus, have been continued since Egyptian times in the Christian ikons and pictures representing Mary with the child Christ. It is probably a serious weakness in Protestantism to have so much deprecated the adoration of the Virgin Mary, which must in the nature of things appeal so strongly to the mother and potential mother ; as it must also to men who have had their earliest and strongest feelings centred in mother love. The worship of the Mother Goddess is a very old religious cult, as is testified by the thousands of clay and other images which have been found, dating from prehistoric times. Along with the worship of the Sun as the endower of fertility the worship of the Mother Creator comes very naturally to man, and it may be a pity that it is not so universal in our own times.

The possibility of improving the race by breeding depends on the more brainy women of the race being willing to play their part. You are not likely to succeed in breeding a more brainy race of men without the help of the women, whatever you may do in other things. The success or failure of such an undertaking depends on the desire of women to bear children freely, and on their willing assistance in joining in some such attempt to improve the mentality and physique of the future race. It is desirable, then, to consider more closely those desires and appetites—expressed or unexpressed—which prompt women to



face with pleasure the undoubted peril and discomfort inseparable from childbirth, even under the most advanced conditions.

Women marry to obtain a home ; to have a companion in life ; to have help in obtaining food and shelter ; and to have the general assistance of one of the other sex in obtaining the various needs of a family. These requirements are so important that the mere satisfaction of the sexual and maternal appetites may well occasionally be lost sight of. We may take it for granted that we all feel a pleasure in the companionship of one of the opposite sex ; that this may often be quite platonic, and without ulterior motive. Nevertheless, sex is the driving force, and in the case of women the maternal appetite, by which we mean the craving of the female to have a child to nurse, tend, and play with, is of the greatest importance.

Women are on the whole more conservative than are men ; and are more likely to fight shy of any proposals that appear to attack the foundations of the family. They are thus not likely to take kindly to anything which may appear to be immoral, or to endanger the religious and traditional aspects of child-bearing.

Women differ a good deal from men in disposition, mental outlook, interests, strength, and desires. Usually we speak of them as the weaker sex—which they are, after puberty, in a physical sense—but this has to be modified by the comparatively recent discovery that their cells contain one more chromosome than do the cells of the male. In the case of the latter the full-formed female chromosome is replaced by a deformed or minute rod which appears to be unable to convey any hereditary characteristics beyond the bare sex-determining ones. As we have said previously, this is the probable cause of the difficulty in raising male children as compared with their sisters ; it is also supposed to be the cause of the more frequent



miscarriages in male conceptions. Owing to this fact the female is the stronger sex from the point of view of inheritance ; and so it would be more expedient to trace the line of inheritance through the female rather than through the male, if only one line of inheritance is to be taken.

There was a good deal of argument at the time of the suffragette campaign as to whether females were the equal of men in regards to mental capacity. The vast majority of women are, unfortunately, much less judicious than are men ; in many respects they may be said to be more childish, or less grown up ; in fact their mental growth often stops at, or shortly after, puberty. Whether continued study of such subjects as mathematics may somewhat stop this petrification of the intellect is open to argument. Probably it does, as higher school girls do appear to have better all-round brains than the ordinary poorly educated woman. It is difficult to point out in what particular function of the brain women are inferior to men, but like the small mental differences between different races it is there, and everyone who sees much of women must be aware of it. Perhaps nature has made them into specialists, and as such their general efficiency has had to take a back seat. However, such small inferiority as does exist in this respect amongst women is compensated for by a greater adaptability, kindness, and gentleness towards the weak, which makes possible the vast majority of successful marriages and lifelong companionships which do exist. In a large office you often hear it said that the female clerks are more conscientious in small matters, neater, less independent, and more loyal to their superiors, especially if these happen to be men ; hence their popularity for this type of employment. As nurses they are usually preferred to men for the same type of reason ; they are more tender, neater, and more sympathetic,



especially in the male wards. Their age-long love of mothering and caring for the home are sufficient explanations of these qualities.

As regards sex, one must distinguish between the two appetites—sexual and maternal. Women do not always have a strong sexual appetite ; but with few exceptions they all possess a strong maternal one. The absence of a normal sexual appetite is often very disconcerting to the husband, and may lead to very unhappy marriages. Another very large section of women appear to possess an inordinately strong desire ; the typical historical case is that of the wife of the Emperor Claudius, Messalina, who is said to have frequented a Roman brothel in disguise. A large number of prostitutes are the unfortunate owners of such an exaggerated appetite.

Very few women are altogether free from a strong maternal appetite, and this might be termed the distinguishing one of the sex. The paternal appetite of men has no comparison with the maternal one of the female. No doubt most men experience a feeling of love of child life, and a desire for children of their own, but I should doubt very much if this would prove strong enough to impel them to undergo the pains and trouble of childbirth. In the nature of things we are unable to prove this. It is often the cause of a laugh from the attendants at a confinement when the patient emphatically asserts : “ There shall be no more.” For they know from experience that they usually come again. When surfeited by a too heavy indulgence at table there is often a feeling that you would like to abstain for ever ; but such a feeling soon passes. There is the story of the Irishwoman who was told by her medical attendant that it might cost her life if she should have any more children. She promptly relegated Pat to the hay loft. Some time later he was surprised by hearing her laboriously



climbing the ladder. To his surprised query as to what she wanted, she is said to have answered, "I have come for me death." In my practice the patients who have been most frightened of a second experience have not been those who have had a bad or difficult confinement, but those who have had very easy confinements, and in addition have had twilight sleep. Possibly that which has passed in a dreamy state may have left a stronger impress of fear on the mind than what has been experienced in a full state of consciousness where there is nothing left for the imagination.

A certain small proportion of women suffer from what appears to be an excessive action of the nervous mechanism which is brought into action during sexual connection, and which when normal should provide the intoxicating feeling of pleasure that many women experience; instead of that they are thrown into a painful and convulsive condition that may result in their partner being thrown out of bed. An elderly lady confided to me that during her married life of thirty years this had been her constant experience; and the description given above is almost in her own words. Divorce is sometimes obtained on similar grounds, and these cases must be fairly common.

Men have a fairly normal sexual appetite, which varies to extremes in a few cases, but not more than we should expect; their paternal appetite is, naturally, much weaker than the corresponding maternal one; and probably the greater cause of the limitation of families among the well-to-do has its initiation on the husband's side rather than on the wife's. Of course many women do, and often with reason, fear the repeated pregnancies to which they are liable. In China, at the present day, and in ancient Egypt, it is said that the women suckled their children for as much as three years in order to prevent the too frequent and rapid pregnancies. Medical



opinion has been adverse to this prolonged suckling owing to its debilitating effect on the mother, and to the danger of rickets in the child. With proper care in diet on the part of the mother, and if it is seen that the child has other food in addition to its mother's milk, there is no real danger in a healthy mother doing this, even at the present day. In my opinion the child should have additional food after as early as six months; and in the mother's case tea should be carefully avoided, at least in the morning or at dinner time. A healthy woman with plenty of open air and sunshine, fruit, and vegetables, and a moderate amount of meat, should be able to keep her health under these conditions. As it is, an enormous number of women are ready to adopt the most dangerous means of getting rid of their unwanted children. It is not so long since there was an outbreak of lead poisoning owing to some person from the potteries having spread the news that lead was an efficient means of causing a miscarriage. It was only after there had been numerous deaths that this practice came to an end; if it has done. Years ago I had a patient who on as many as five occasions was attended by me for excessive bleeding due to miscarriages, which I had to clear out, usually in the middle of the night, with no assistance. It was only on her death from cancer, which had no connection with the miscarriages, that I learned to my surprise that these miscarriages were self-induced by means of the homely but dangerous knitting needle.

In New Zealand it is stated that the great majority of deaths from septic miscarriages in that country are in married women. There is no doubt that if women are so determined to bring about abortions it should be made legal for them to have it done under aseptic conditions. The law as it stands may come up to the Christian ideal of some people, but from a practical point of view it might be considered as somewhat



lacking in sympathy. To assert, as many do, that to obtain a miscarriage is ruinous to health is not borne out by the facts ; many women suffer throughout their lives from repeated miscarriages from one cause or another and suffer no harm except from the immediate shock and loss of blood. The constant prevention of impregnation is quite as likely to be injurious ; and in addition appears to be impracticable in many cases. If this hate of the trouble of child-bearing were common amongst women, life on this planet would be doomed to extinction ; but, as it is, there does not appear to be any real danger of this ; yet such a spirit existing largely amongst the better classes of society would tend to make the survival of the better endowed very problematical. There always has been, I imagine, a tendency for the more civilized to give place to the less civilized ; for a lower to replace those of a higher level of culture. It may be that if many women are given a taste for the many distractions of civilization they are less prone to seek their amusement and occupation in the more natural duties of motherhood. In the case of most women it matters little, as they are not likely to leave much hereditary weakness of this description amongst their few offspring, if they have any at all. Amongst the upper and better brained classes it is a misfortune which cannot be helped ; all the more reason for making the best possible use of those women who have both a strong maternal appetite and a good family mentality. Some inducement should be held out to them to enable them to produce children whether married or not. This is not likely for some years to come, at any rate amongst our rather slow-moving race.

It must be the experience of most medical practitioners that amongst married women nothing is so dreaded as not having any children at all. After a few years of married life without any sign of the



expected child they become impatient and seek advice from their medical attendant. Later on if nothing can be done they are liable to become fretful; even melancholia and actual insanity are not unusual in these circumstances. Unmarried women are not so free in expressing their feelings, even to their medical attendants; still you may guess that some sort of feeling of frustration, often subconscious, or only half realized, is at the bottom of their neuroticism and discontent with life and all that it offers. Sometimes they give away the source of their discontent by frequent disparaging remarks about the opposite sex, and their dislike of marriage as a career for women. You may often guess at the existence of a grievance by the emphasis laid on its denial. In somewhat the same way the power of the maternal instinct may be shown by the actual cruelty and neglect of foster mothers towards their little charges; more often shown, perhaps, by stepmothers. Readers of the newspapers will be well acquainted with this painful type of case. No other reason can be usually assigned to this kind of conduct except that of a subconscious feeling of jealousy towards another woman's child. In these circumstances even well-educated and highly intelligent women are sometimes guilty of a neglect and cruelty that we should hardly expect to find even in the most depraved. They may appear to be possessed of a veritable devil. We may conclude, then, that in a very large number of women there is a sufficient amount of the natural instinct of motherhood to keep alive the race. Only amongst the intellectual classes it should be more freely drawn upon than it is ever likely to be amongst our highly civilized people. The only hope of utilizing this idle material is the formation of some powerful society amongst better-class women. Impregnation might be obtained without actual contact of the father and mother, as has occasionally been done



in the consulting-room. The objection to this is that it is more likely to be ineffective amongst many women owing to the loss of the natural stimulus and excitement of contact—as the same thing is amongst animals when thus attempted.

Some such society could be set up to act as a sort of central matrimonial bureau. It could investigate family histories ; bring suitable young people together ; and in other ways bring the importance of more thought for the future generations before the minds of the people. We have a very sentimental literature, and too much importance has been centred on love as the sole thing to be considered in marriage.



## CHAPTER VII

### THE ASCENT OF MAN

THE study of the growth of an individual from a single cell shows us the various stages that we have passed through in our long history of upward struggle to man's estate. We can see roughly outlined under the microscope the various stages of our development : first, we see that we were unicellular organisms possessing an independent existence in the warm water of the primeval sea ; then we became multicellular, or collections of single cells, the family hanging together instead of separating after birth ; then we became a round mass of cells with an opening to act as an entrance for the general food-supply. After thus forming the commencement of a social system we went on developing in complexity. At one period we had a primitive intestine, which has in the course of time become the central canal of our spinal cord. Then we became fish-like creatures with gills, and these can still be traced as the vestigial remnants that sometimes give rise to troublesome cysts in the neck. The air bladder that originally enabled our ancestors to keep their balance in the water, in the course of time, when they first attempted to take to the land, became our lungs. Fins became arms and legs, and, at first living as do now the crocodiles and lizards, we gradually developed into the lemur-like creatures which were our first ancestors who in any way began to resemble our present form. At one time we must have lain in the mud and peered dimly at the passing shadows above us ; as is shown by our still possessing a vestigial eye buried in our brain, now called the pineal body, and acting as a producer of complex



secretions that have very important functions to perform in the economy of our bodies' growth and in the regulation of sexual and birth functions.

After an amphibian stage we passed through the stage of the primitive placentals. We no longer laid eggs, but kept them inside until they had passed through a more and more complicated development, feeding them by means of an elaborate organ, in the sinus of which the fœtal and maternal blood come into close relationship without actually mingling. It is from this organ that the term placental is derived for the very large class of animals which thus nourish their young before birth ; after birth those which feed them with their own milk are termed mammals. From small lemur-like animals the primitive monkeys and apes were slowly developed ; and a good deal of stress was formerly laid on the fact that very few links could be found amongst fossils to bridge the gap between the apes and man ; as a matter of fact quite as many have been found as could be expected, and new forms are constantly cropping up in various parts of the world.

Life may have had its first beginning in the sticky slime, or zooglœa, that came to float on the warm waters of the primitive seas. In this simple compounds of carbon, nitrogen, sodium, iodine, sulphur, and so on, derived from the salts of the sea and volcanic gases, would be brought together in intimate relationship. No doubt it would be easier to take refuge in the old idea of a spontaneous miracle of creation, or the arrival on this planet of particles of living matter from some other world on a fragment of a meteorite.

We know very little of the chemistry of the smallest particles of life, such, for instance, as the filter-passing organisms ; such minute bodies might consist of only a few elaborate molecules joined together. It is not impossible to conceive organic molecules of this nature



taking on some of the simple processes of life : chemical and physical attraction and repulsion ; and division by fission after reaching a certain size. As they grew larger some of them would find means of retraction and contraction to be advantageous. So in time the more elaborate simple organisms would come into existence ; as their life, allowing for accidents, extends over millions of years—simple division when grown too large does not mean death or birth of the individual—they have had plenty of time to evolve a complicated system of reactions, even if small. In time some of these simple collections of organic compounds would become joined together and would form a more complicated organism, although a simple cell. In some way that may be difficult for us to understand, but which should be not beyond our imagination to visualize, life on this planet took its origin. We know that the life-history of man can be traced through the centuries back to the primordial slime by his track through the ages, much as if the Loch Ness Monster had left its track through standing corn. If God devised the machinery for evolution from the simple cell up to our elaborate bodies, you can be sure that there is no need to boggle over any difficulty of turning carbon and other chemical molecules into simple living cells. Some such laws must exist for such conversion. The simplest living cells that exist that are easy to observe and study are the *amœbæ*. These are glassy-looking pieces of protoplasm which move by projecting forward pieces of their substance in a flowing manner, and are thus enabled to surround and engulf other minute organisms ; the white blood-corpuscles of our own bodies do just the same thing. A large *amœba* has been observed to swallow in this simple way a smaller *amœba*, and this has been observed to make efforts to escape, sometimes successfully. These simple bodies are then the possessors of life and feeling,



or they act as if they had such gifts. It may, as I have said above, be really only a mechanical reaction to a chemical stimulus, but then our own reactions are much of this nature if you come to an ultimate analysis.

These simple cellular organisms appear to possess a certain amount of directing power ; for instance, the small motile cells of *Paramœcium* move about like small motor-cars with a wideawake driver. All this may be due to chemical or physical messages picked up by the sensitive cell, similar to our sense of smell, or a sense of nearness caused by electrical changes in their minute range of surrounding space. They can hardly be alive as we are with our highly developed nervous systems. When we idly allow our thoughts to wander, vivid pictures of past or imagined events cross our consciousness as if thrown on a screen ; we are aware of surrounding objects, cold, or warmth, well-being, or discomfort ; so, too, perhaps, up to a certain extent they may be like us. Still, it is hardly likely that they can recall the past at will, as we can. Their sensation must be more of a simple feeling of awareness of objects, and an urge to set them right as far as is in their limited power. Possibly all cells, both animal and vegetable, may have some sensation of awareness of this description, and a similar urge to alter their position and activities to the best advantage. Some sort of alteration in the molecular constitution of the protoplasmic framework of the cell must follow on every action or every reception of an impulse from their surroundings ; in this way memory has become possible, as has also the action of the chromosomes of the sexual plant and animal in directing the future life of the new individual, and in providing the mechanism of inheritance.

When cells came to live together in communities some central directing committee of specialized cells



had to take on a good many directing and news distributing functions ; otherwise the various activities of the different cells would have resulted in chaos. Hence we get the commencement of a nervous system. In worms we find a circle of cells in each segment of the creature which fulfil the function of causing its muscles to contract and relax, and so cause the crawling movement. In *Medusæ*, or jellyfish, we find a circle of cells around the boss, or dome, which direct the drawing up or extension of the finger-like limbs ; across the surface of the dome connecting fibres pass to keep these cells in contact. As sense organs develop, such as eyes, the smelling organ, the ears, and the whiskers, or feelers, these organs are more advantageously placed at the fore part of the body, so naturally we find the chief collections of sensory nerve cells collecting in this position, and hence we have, here, the first commencement of the brain. The earliest brain would naturally come to have a centre for awareness for the whole body situated in this position, where it would be in easy communication with the important sense organs. Some of these cells would develop a slow-acting manner of discharge, so as to keep up the urge for the animal to proceed far enough away from uncomfortable positions. We should thus get the growth of cells that took notice of cold and heat, later of pain, hunger, and an unsatisfied feeling of sex. From these cells, according to Dr. Bostock, would develop an emotional centre ; and this later on would act as a coarse adjustment, directing the flow of neural energy towards the appropriate centres of the new brain that would develop in course of time for the storage of useful memories of different situations. We find that the elaborate new brain, or neo-pallium, has come almost to bury beneath its mass the small old brain or optic thalamus. The nerve cells governing the movements of the stomach and intestines, the heart, and



lungs would be so automatic in their activities that we should seldom have any notice of their existence. During consciousness there would be a constant flow of a certain small amount of energy between the two basal centres for awareness and emotion, and focused by these on to the particular cells in the new brain amongst which lie those cells that have to do with such thoughts and feelings, and have stored up the necessary records for such thoughts and activities. The impulses will here be finely adjusted to the few cells that are especially required. The awareness centre in contact with all incoming impressions transmits them to the emotion centre, and so to the cerebral cortex, some going straight to the higher brain without touching the emotion centre. According to Dr. Bostock these two centres act as a coarse adjustment towards the part of the cortex required ; arrived there they are finely adjusted to the particular areas of the brain that have to do with the finer feelings and judgments connected with such impulses. Normally, as we know from our sensations, very few cells are engaged in any one thought at the same time. However rapidly our thoughts flit from one subject to another, we never, or rarely, are able to think of two things at once. If we attempt to do so, we find it exhausting as well as confusing ; in fact the persistent effort to do this leads to, or is the first symptom of, a nervous breakdown.

If we focus our thoughts on a monotonous picture of sheep jumping through a stile, then only a few cells are engaged, and as these soon become exhausted we speedily drop off to sleep, owing to the tired cells withdrawing their dendrites, or communicating fingers. During sleep there will be a flow of such energy as is working between the automatic centres for the heart, lungs, and intestines ; perhaps, also a slight flow of energy within the centres for awareness and emotion



in circles within their own domain ; when these link up with the cerebral cortex we begin to dream.

A nerve impulse along a nerve is probably of the nature of a wave of molecular change ; it is accompanied by a change of electrical potential ; and by this the rate of passage of the impulse can be measured. The wave will be, possibly, modulated in the same way that wireless speech is modulated. We have here an automatic telephone exchange with its subscribers, its batteries, and its receivers. There are millions of lines, and millions of individual cells ; each cell is a live individual and lives its own life, subordinate to the good of the whole. We know that it is not perfect, even in the finest brain ; thoughts go in the wrong direction, and awaken undesired ideas ; sometimes we cannot obtain a connection which we may be in a hurry to obtain ; we may remember that we recognize a face but may have to wait sometimes for days before we can recall the name of the individual, or where, or when, we last saw him, and so on. We have a difficulty in writing a paper because we cannot think of it as a whole, and so it becomes disconnected and wanders away from its subject. The brain is a double organ, so that centres on one side are duplicated on the other, and normally work together like a pair of well-trained horses. This may be why injuries to the frontal lobes in front of the motor areas are often of so little detriment to the individual, as the corresponding centres on the other side can carry on ; this is called the silent part of the brain ; still differences, I believe, can be detected after all such injuries. In fits there appears to be a sudden and exhausting discharge of neural energy from a large part of the brain cells. This may be initiated by some disturbance, sometimes from the site of an old injury of the brain ; perhaps due to slight local congestion or circulatory disturbance. In some cases it may be due to insufficient insulation of



the nerve fibres in the brain, so that impulses spread too easily from one fibre to another; such a defect might be hereditary. Mental disease, as we all know, has an unfortunate habit of running in families, and a disposition, or weakness, to it is undoubtedly frequently inherited. If every person with a mental history could be killed, or sterilized, the future race would be greatly improved.

After we pass the stage of apes the most primitive human remains that we have any knowledge of is the very primitive skull found by Dr. Dubois, in Java. He found amongst the early remains of other creatures a human, or semi-human skull, with two molar teeth and a femur. The forehead was flattened, and had a projecting ridge above the eyes: the cranial capacity was two-thirds of that of a modern skull. The teeth were more human than apelike. The femur which was found some distance away showed that the creature to which it belonged had an erect attitude, and that in height it would be about as tall as a European. It has been doubted whether it should be termed an ape or a man. To call it a "missing link" does not appear to be incorrect, even if it should prove not to have been in the direct line of ascent.

After this discovery, in point of age comes the Heidelberg jaw, which was found at a depth of seventy-nine feet. It was of massive structure and must have belonged to that race of man which has been termed the Neanderthal race. In some respects these creatures had developed more away from the Simian type than had the race which afterwards developed into modern man; in some other respects they were more primitive. The teeth are particularly noteworthy, being very large and having a very capacious pulp cavity, which extends down to where the upper parts of the fangs are in human teeth. In this respect the teeth of human beings still resemble those of monkeys and apes. The



teeth of Neanderthal man had developed in this way so as to be able to grind up better the very rough food on which they must have largely lived ; yet they did not live exclusively on roots and nuts, as the large number of bones of all descriptions found with their remains testify.

To some extent their teeth resemble those of cattle, and are so termed Taurodont. The canine tooth is less fang-like than is the tooth found with the Piltdown skull, and more resembles a modern canine ; whereas the receding chin and broad palate are much more monkey-like in character. In the Gibraltar and other skulls belonging to this race there are large supra-orbital ridges, such as are found in some of the apes, but not in men or monkeys.

This, then, is probably a race that was developing in another direction to that of *Homo Sapiens*, as the early representatives of our race are called. They appear to have died off ; perhaps they were killed and eaten by our savage ancestors. It has been suggested that a certain amount of mixture with the Nordic race took place, as a Nordic skull showing some particulars like those of the Neanderthal race was found in an island off the German coast ; another skull showing similar resemblances was found in some early Norwegian graves in Greenland. These discoveries were received with glee by some of the French anthropologists as showing the brutal relationship of the vaunted Nordic race to these beast-like men. These resemblances may have been only due to disease ; but if really due to an old strain, there does not appear to be any reason for the Nordics to be unduly depressed over it. Such a skull formation might possibly appear as a sport, independent of inheritance. It appears to me to be more interesting if it should really be a trace of this old race, although I am personally probably more Nordic than Iberian in my own family tree. No trace,



otherwise, of this at one time numerous race has been found later than the close of the Mousterian period.

The Stone Age is divided into Palæolithic, or Old Stone Age, and Neolithic, or New Stone Age ; these are distinguished from one another by the introduction of grinding and polishing the edge of flint weapons at this period. In the same way the Palæolithic, or Old Stone Age, is divided into early and late by the improved edge of their implements obtained by means of secondary flaking along the edge. This was done by applying pressure with another flint, or maybe with a stick.

There are again three periods that are distinguished in the early part of the Old Stone Age, namely : Chellean, Acheulean, and Mousterian. The Chellean instruments are distinguished by their roughness, and consist mainly of rough-pointed hand axes ; no doubt their more important weapons would be made of wood hardened in the fire, but as these would perish in the long ages that have elapsed since their times we have no remains to show what kinds of implements they thus fashioned. At this period there is evidence to show that the inhabitants were of the *Homo Sapiens* species, whereas in Acheulean and Mousterian times these were replaced by the peculiar race we have previously mentioned as the Neanderthal. In these two latter periods there was an advance in the type of worked flints, smaller lance points of flint, probably fastened to the shaft by means of animal sinews, being found. These are larger and clumsier in the early Acheulean, but gradually become smaller and lighter as you pass from early to late Acheulean, and progress still more as you approach the early Mousterian, and are still better in the later Mousterian. At the end of this period we lose sight of the Neanderthal man, and in the warm and succeeding Steppe Age, before and after the Wurm Glacial Period, he has disappeared.



The skull of the Neanderthal man was of fair capacity, but the frontal lobes were smaller, and the markings on the inner surface of the skull show that the convolutions were less well developed than are those of modern man, or than were those of the Cro-Magnon man who succeeded to the ownership of the European hunting grounds. The head of the Neanderthal man was sunk in the folds of flesh on his powerful neck, showing that he still crouched as he walked. He had very powerful jaws with strong broad teeth with short fangs owing to the massive grinding part of the tooth with its large pulp cavity extending down to where the fangs would be in a human or monkey tooth. He was an omnivorous feeder, eating animal or vegetable food according to circumstances. With the Neanderthal skulls found at Krapina were human bones which appeared to have been split in order to extract the marrow. This has been questioned, but more on sentimental grounds, probably, than on inherent probability. Human beings when driven by necessity have, even in modern times, shown that they were not always above turning cannibal; numerous savage tribes are even eaters of human flesh by preference. He would not be particular whether the flesh thrown in his way was semi-putrid or not. In later times most savage tribes developed taboos to various foods, such as fish, or, as the Jews and Mohammedans still have, to the flesh of the pig; but in those early times they would be probably only too glad to eat any food which they could possibly get, and no doubt small fry such as frogs, caterpillars, locusts, newts, snails, and so on, would be very acceptable. Very likely human life would resemble that of the apes at the present time: that is, there would be family groups of a few women with their young and one old man. The young males, as soon as they began to excite the jealousy of their father, would be driven away to fend



for themselves, until in the course of time some powerful young male, either of the same family group or some other, would succeed in ousting the old man by force, and in thus taking possession of the group of women and children. When any individual grew too weak through old age or illness to keep up with the others, he, or she, would be left to die from starvation ; or it might be that they would be killed and eaten, especially would this be the case in times of shortness of food-supplies. They might not always be as savage as this ; some tribes might at a very early date develop altruistic customs, owing to their constant necessity to defend and feed the young, and in times of stress to help each other. Such habits easily become second nature to most creatures, and would in course of time become so habitual that they would be the unwritten law of the tribe and would only be broken under the pressure of great necessity.

The disappearance of the Neanderthal man marks the end of the Early Old Stone Age, and the commencement of the Later Old Stone Age. Quite a different race is now found to be in possession of the hunting grounds of Western Europe : this is the Aurignacian, or Cro-Magnon. The culture is usually termed Aurignacian, and the race the Cro-Magnon. This new culture shows a definite advance on the Moustierian : the flints have secondary flaking along the edges, and are now more varied in type ; in addition this culture is associated with, particularly in Spain, paintings on the walls of caverns of great artistic skill. These are superior to any efforts made in this direction by any of their successors until historic times. Some of these paintings depict naked warriors shooting at their enemies with bow and arrows. These, along with the numerous bone and ivory instruments, thought to be arrow straighteners, are the first evidence we have of the use of the bow. A picture representing women



clad in long robes, dancing round a naked man, is some proof for the prevalence of fertility, or phallic cults. Numerous clay and ivory images of very fat women of the large family type support this evidence for the existence of these fertility cults, and recall the eastern Mediterranean worship of the earth Goddess. There are also numerous paintings of the outlines of hands, usually with one or more fingers missing. Similar mutilation of the hand was practised in Australia, usually as a sign of grief for the loss of a relative or friend.

Beautifully painted animals are shown with spears pointing at the seat of life, or heart, as if to teach the young hunter the most vulnerable part of the body. Similar paintings have been found in Africa made by the tribes of Bushmen. The wanderings of the Bushmen through Central Africa can be traced by the existence of similar paintings in many caverns along the line of their passage. The Bushmen are a small negroid race who do not appear to have any other relationship to the people who made the paintings in Spain, as these are usually supposed to have been a tall race called the Cro-Magnon.

One of the earliest discoveries of the Aurignacian culture was that of a burial in the Gower peninsula of Wales. A skeleton was found buried in a sea cliff cavern, stained with red ochre and decorated with necklaces and strings of sea shells. The red ochre would be painted on the body before death in order to give an appearance of life and blood, and as the body decayed, this would come to lie upon the bones. This custom of placing dyes on the bodies of the dead was followed by the successors of the Cro-Magnons in the Magdalenian and Solutrean periods of culture, and was taken by the latter as they travelled eastwards in pursuit of the wild horse which provided their principal means of support. At the present time the



plains of Russia are dotted with numerous mounds, called Kurgans, which, almost invariably contain bodies which have been decorated with this red ochre dye.

The Cro-Magnon skeletons are very tall, and they had large skulls; some of these people must have reached the height of 6 ft. 4 in. Although their skulls are of a remarkable capacity it is probable that their brains were of a more primitive type than the modern brain, as is shown by the simpler markings on the inside of the skull where the lobes of the brain with their sulci and blood-vessels have lain. They had very high cheek bones, and from this along with their height it has been suggested that the Scots may have had a good deal of Cro-Magnon blood in their veins.

As their faces were round and broad, and as also they were long-headed, they were said to have been against the rule that a long-headed man should have a long face; or, as it has been called, they were disharmonic. Their forearm and leg bones were longer in proportion than in a modern man. In this there is some resemblance to the negro type, as there is also in the presence of a nasal gutter. At Grimaldi a negroid type of skull has been found in close contact with Cro-Magnon skulls. Otherwise there does not appear to be any evidence that they were related to the negroes. In addition to the red ochre on the bones, the bodies were decorated with necklaces of pierced snail and sea shells. No doubt they must have had a strong belief in the reality of a future life.

After the Cro-Magnon or Aurignacian, we have the Solutrean period, which is recognized by the appearance of large laurel-headed spear-heads. These people lived largely on horse flesh, and at their encampments enormous mounds of horse bones have been found. It is thought that as the climate altered and the steppe country changed to forest their favourite prey moved



to the east, where large open steppe country was still to be found, and were followed by these people. Perhaps in the course of time they learned how to domesticate the wild horse, and would come to keep large herds of them, at first for purposes of food and milk, and only later for riding purposes. The wild horse was more of a pony than what we should know as a horse; and even in historic times it was used to draw the war chariot, as in Assyria and Egypt; and even in the time of the Roman Empire we find that Agricola was faced by the chariots of the Caledonians. It was only when a larger horse had been successfully bred by man that he came to prefer to use it as a cavalry charger.

These Solutrean horse hunters appear to have been mainly of a round-headed type; but the people whom we find in the Kurgans of the Russian steppes are undoubtedly a long-headed race.

After the Solutreans had moved east after the wild horse we find the hunting grounds occupied by the Magdalenian race. These were short, long-headed people, akin in physique, if not racially, to the Mediterranean, or Iberian peoples, whom we find in later and modern times. They appear to have been more careless about the chipping of their flint weapons than were their predecessors; but had beautiful gravers and scrapers of flint, and also used spear-throwers; and these, made of bone and ivory, are sometimes beautifully engraved with the forms of animals. They used bone harpoons for catching fish. Their culture appears to have reached as far north as Derbyshire.

After these we reach the so-called transitional period between the Old and the New Stone Ages, which has been filled by the discovery of three cultures: the Azilian, Tardenoisian, and Maglemosian. Azilian culture is remarkable for the presence of curiously marked pebbles, which have had various conjectural



explanations given to them: one is that they are an early method of conveying messages, and another that they had some religious significance.

The Tardenoisian culture is recognized by the immense number of small flints found among its remains. Probably these were due to the discovery that small flint points set on the edge of a piece of wood made a serviceable saw. As the wood decayed, these small points would be all that was left to exercise the ingenuity of the archeologist to fit a suitable explanation to them.

The Maglemosian peoples came along the Baltic shore, and passed into England across the then boggy plain that is now the North Sea. Their characteristic harpoons have been found along the Yorkshire coast. They would meet the race that had evolved the Azilian culture somewhere about Calais. Some authorities have hailed these people as the forerunners of the Nordic race, which afterwards we find in possession of the Baltic shores. Possibly they are the people who left their harpoons in the caves at Oban, in Scotland. These barbed harpoons are made on the flat from the horns of the red deer; formerly, in the time of the Magdalenian culture, the harpoons had been made from the reindeer horn, and as these were of more solid bone than are the horns of red deer there was not the same necessity to carve them on the flat because of the pulp cavity. As the reindeer had followed the receding ice, they had to do the best they could with the only horns they could find. Their racial stock has not yet been settled beyond dispute; and whilst Speke considers them to have been of Mongolian stock, as are the modern Esquimoes, Keith is of the opinion that they were early Nordics, and that it was from this race that the Caledonians first received that colouring and stature which made Tacitus ascribe to them a Teutonic affinity. Whatever may be the



truth about the Maglemosians, it is an accepted fact that the Goidels or Gaels were mainly a fair people, of tall stature, and no doubt long-headed. The ancient Irish poetry leaves no doubt on this point; the hero is often represented as riding in his chariot with his long golden locks floating behind him, whilst his servant ran behind with a close-cropped black head. The Kerry and Connemara people often still show this type of dark, short, long-headed people, which locally is attributed to a mixture with Spanish sailors of the time of the Armada. Although the population of Ireland at the time of the Armada may only have been a bare million, even then the story attributes unbelievable prowess to these sailors in leaving behind such extensive results of their fatherhood.

If we are to believe the more historical accounts that have come down to us of these cast-aways, they were killed and it is said even eaten by the savage tribesmen. The dark, small race of Ireland, are of course the same people that Tacitus describes as the inhabitants of the Severn country, and whom we see reproduced so commonly as the characteristic North Welshman. Their fair-haired conquerors were no doubt the people who introduced the Aryan tongue, which so many Irishmen of the present day are attempting to revive. What the original Irish language of the conquered dark peoples was must remain a mystery: it may have been akin to the Basque of the Pyrenean regions of Spain and France. The fair-headed Gaels may have in part derived their ancestry from the Maglemosians, or they may have come in later as the first wave of the Nordics, passing from their original homes in the steppe lands of Russia and Hungary, where the Kurgan graves have preserved the skulls of a long-headed and tall people. It is said that tufts of fair hair have even been found adhering to these skulls—if, indeed, the fairness is not due



to the long years of bleaching that they have undergone.

Another possible source of a fair-headed people in Scotland might be in the tribe of the Catti, or Cats, in modern times known as the Keiths, whose badge is a wild cat. Caithness takes its name from this tribe. A tribe of Germans bearing a similar name was well known in Roman times, and it is possible that some wandering branch of this tribe passed into the north of Scotland, as the Parisii did into the land round Whitby at a later date. This, however, would not explain the introduction and rapid progress of Gaelic, which as an Aryan tongue belonging to the first wave, or Q-speakers, is akin to Latin, and differs from that of the P-speakers who formed the later wave and are now known as the Welsh, or as they still call themselves, the Cymri; the similar wave in Italy, following the Q-speaking Latins, called themselves the Umbri, which is probably the same name. These peoples in Italy were mostly round-headed, and undoubtedly of Alpine stock, the common explanation being that they had taken the language from the fair Nordics who had conquered them. On the other hand, you might urge that as undoubtedly there are remains in the round barrows of a round-headed people who had reached these shores from the Continent, it might quite as well be that it was these round-headed people who introduced the Aryan tongue to the Nordics, who had previously found a home in the North of Scotland, and who then conquered Ireland, carrying the Gaelic tongue with them. The second wave of P-speaking Aryans were at any rate much mixed racially, and it is dangerous to say that they were Nordic by race, as they must have picked up too many different elements in their journey across the Continent. You cannot call the Welsh Aryans by race because they happen to speak an Aryan tongue; nor, because they call



themselves Cymri, can you picture the original Cymri as being a dark, small race of people. Languages must have passed over the Welsh like rain over a duck's back, leaving precious little behind. At one time they possibly spoke a language akin to Basque, and then they spoke Gaelic, as is shown by the numerous Ogham stones ; and lastly they received the P-spoken language as late as the decline of the Roman power in Britain, if we are to take the modern view of Professor J. E. Lloyd in his history of Wales.

Lately the whole of Europe has been amused by the claim of the Nazis to be the Aryans, and of their adoption of the hooked cross as a sign of their political belief. As a matter of fact, the purest Nordics, if indeed they are to be credited with the invention and spread of the Aryan group of languages, are the Swedes and Norwegians ; the Danish, Dutch, Flemish, and English, Scotch, and Irish coming later in the same order of purity ; the Germans would rank perhaps slightly before the English.

As for the Swastika, it has been found from Japan to America and from Sweden to Africa as a decorative sign on pottery and other articles of primitive culture. Usually it is considered to have been a sign of cultural and religious significance attached to the Mediterranean races, which passed round the coast of Asia to Japan, and so to America. It has been associated with circumcision, the *couvade*—that is, treating the husband as the sick person when his wife was about to be confined—massage, mummy making, megalithic monuments, tattooing or painting the body, and the association of the sun and serpent in religious ideas. These practices are not found in the primitive homes of the Nordics, nor do they travel south of the equator in Africa. No doubt the adoption of the Swastika as an emblem is just a proof of the general interest of the Hitler party in archæology. In fact the Jews,



or at least the original Hebrews, as a branch of the Mediterranean race, should have a better claim to the use of the Swastika as an emblem than should the modern Gremans, who are admittedly a mixture of Nordic and Alpine races.

Nationalism is understandable and not to be lightly scoffed at. Like the modern Irish, the Germans are a race of their own at the present time, and nature left alone will endeavour to split them up into a series of races in the future. It is only human to be somewhat of a child, and dwelling on the heroic past of our race should be an inspiration rather than an evil ; at any rate we should not blame what we are all guilty of, and cannot help in our own case ; but it does show that the directing power of large nations should be in the hands of the more brainy part of the nation. If we think of that and try to bring it about, we shall have done all that we are able to do.



## CHAPTER VIII

### EUROPEAN RACES

DURING the war of 1870-1871 the German guns firing on Paris did some harm to the Natural History Museum, of which De Quaterfages was the Curator ; smarting from the insult to his patriotism and the harm done to his loved institution, after the sound of the guns had died away he dipped his pen in gall and wrote with scientific candour that the Germans were not the true Aryans that they supposed themselves to be, but in the case of the Prussians the descendants of a debased tribe of Finns. He made the mistake of assuming that the Finns and the Laplanders, who speak a similar language, were identical. Since the followers of Hitler have claimed once again that the Germans are the true Aryans, the interest of the world will again be attracted to this so debatable question. In the human race we see three main divisions : the Black, the White, and the Yellow. They can also be divided into the same three divisions by studying the microscopical sections of their hair : ribbon-shaped in the case of the Negro, hence the curly hair of these people ; oval in the case of the European white races, hence their wavy hair ; circular for the Mongolian yellow race, hence their stiff, straight hair. These three races are also distinguished in the same manner by the shapes of their skull : elongated, or dolichocephalic, for the Negro ; intermediate for the European ; round for the Mongolian. There are thus three well-marked species of the human race, and nature in her continued efforts to produce new forms of life is still endeavouring to produce new subdivisions of these. In Europe we have three easily distinguished subdivisions that had



their origin about the time of the great Ice Ages, when the peoples of this planet were more sharply divided from each other by barriers of ice, seas, and mountains. Since that time they have been considerably mixed together by migration and conquest, but they still persist sufficiently to be easily recognized in most cases.

In the Mediterranean regions, including North Africa and stretching up to these islands, and to the east round the coasts of Asia, we have the descendants of the primitive Iberian or Mediterranean race. Their skulls, or the skulls of a similar people, are to be found in the older cemeteries all over Europe. In the Early Stone Age the peoples of these islands were undoubtedly of this description; and their remains have received the name of the river drift men, as their remains have often been found in the old river beds and in the terraces deposited by these rivers. These people were small, slender, and markedly dolichocephalic, or long-headed; probably they were also dark-complexioned, as their descendants the North Welsh and Kerry men are to this day. Remnants of this race are also found in the outlying parts of Scotland, although here there appears to have been a strong infusion of the fair northern race at an early period. This latter race is now most prevalent along the shores of the Baltic, and is often called the Nordic race; possibly its original home may have been in the wide grassy steppes of Russia and Hungary.

The Germans maintain that the original Nordic home is to be found in North Germany and along the Baltic shores, where it is now to be found in the greatest purity. However that may be, the plains of Russia must have been occupied by a fair and long-headed, tall race of people during a prolonged period of time after the Ice Age, as is shown by the numerous kurgans, or barrows, containing the remains of such a people. The bones are usually found covered with



red ochre, as were the bones of the Cro-Magnons and Solutreans. Sometimes pieces of fair hair have been found, still fixed to the skulls. It has been objected to this discovery that the colour may be due to bleaching through the long ages of burial. Whether this is so or not hardly appears to matter, as there are other grounds for concluding that these people must have had a tendency to fairness.

In historical times, before the advance of the Alpine race into South Russia, the country was largely occupied by the Finns, who are said to have been fair and tall, although probably having from early times a good deal of mixture with round-headed peoples. H. F. K. Gunther considers that they were of East Baltic race—that is a variety of the race which we usually connect with the Alpine race. Professor Ripley considers them to have been originally Nordic, contaminated in later times with round-headed Alpine, Lap, and perhaps Mongolian blood. All these races in the course of history must of necessity have received blood from the numerous round-headed peoples of Asia, as well as from the Southern Alpine race. At present in Finland they show a good deal of Nordic blood. Of course they have received a good deal of Swedish immigration, but even the purer Finns are said to have had a good deal of fairness, large stature, and long-headedness. The Slavic name for Finn is Tchoud, which means giant, and in the Swedish Eddas the same people are called Jotuns, which also means giants. The Esths, the original Magyars, the Chermis on the Volga, and the Ostiaks and Voguls in Siberia, are all of Finnish race, and although much mixed with round-heads, still show a tendency to long-headedness and a red tinge of hair.

These peoples, however, do not speak an Indo-European or Aryan language; they still speak an agglutinative tongue, similar to Basque, and perhaps to



the original languages of the primitive races of Europe. Physically, then, probably these peoples, as well as the true Aryans, originally resembled the Mediterranean race; simply growing larger, owing to the delay in puberty of the woman in northern regions, and fairer owing to the selectivity of a cooler climate. It is not improbable that a branch of this northern European race developed an inflectional tongue at a very early period; still, it is impossible to prove that the round-headed Slavs and Alpine race were not the true originators of this improvement in speech. At any rate a tall fair people speaking such a tongue passed through the passes of the Himalayas into India, about 1400 B.C., and gave their speech to the greater part of that country.

After the entrance of these tribes into India the original tongue became split up into many different languages in the same way that Latin did in Europe. The original tongue was preserved in hundreds of religious poems and incantations which were learned by heart by the priesthood and handed on by memory in the same way as the Druids are said to have done with similar poems in this country. Finally, after some fifteen centuries, these poems were committed to writing and called Sanskrit; this means "according to rule," and the old language was given this name owing to the fact that, being an extinct language, elaborate rules had to be arranged for its translation and writing. In a similar manner new grammars had to be constructed for the reading and writing of Latin in the Renaissance period in Europe. As with Latin in Europe, it had come to be the principal means of communication between the learned of the different languages, all of which had been derived originally from it, but had come to differ so markedly one from another that they could no longer be understood by the different sections of the people.



The word Arya was a Sanskrit word meaning noble, or one belonging to a good family ; it was used as a general name for the invading tribes, and it contrasted with Anarya, meaning unworthy or vile. The original meaning was probably kinsman, or one of the same race and religion. After the conquered tribes came to be taken into the social system as the fourth caste, or Sudra, the word Arya came to mean the noble or the upper castes, as contrasted with the lower. In Persia, which had also been overrun by these tribes, it retained its meaning as the national name, and hence we get the name for Persia of Irania, originally Airyana. Herodotus says that the Medes were originally known as the Arii ; Hellenicus that Persia was called Aria ; and from Eudemus we obtain the phrase, " The Magi and all the Aryan race." There is also an inscription on the tomb of Darius (485 B.C.), in which he calls himself an Arya, and of Aryan descent. At any rate, the Persians should have a right to this name, even if as a nation they are very much mixed at this late date.

The name was first used for the Indo-European languages by Max Müller and Pictet ; it has naturally come to refer to the race, or races, which are supposed to have originally evolved this inflectional language, from which all the languages of Europe have descended, with the exception of Basque, Turkish, Finnish, Hungarian, and Lap.

When these early Aryans descended on India they drove out or subdued the native races as they had done in Europe ; in neither case did they alter the physical character of the inhabitants to the same extent that they did the languages. In India there are many tribes and races who have retained the original languages of the country, such as the Dravidians, a darker and more negroid people. Tamil is another original language. Probably the races of India were originally much as the Mediterranean races of Europe,



only with a greater relationship to the negro. You may see a similar mixture of Iberian, or Mediterranean, with the negro in North Africa.

The dispute between the French and Germans which has so interested the scientific circles of the world was whether the real Aryans were not really the Alpine race; even at the present time a good deal may be said for the latter people as being its originators.

The Alpine race appear to have infiltrated into Europe at the close of the Stone Age, coming by way of the Balkans from Asia Minor, and so up the Danube into the Alpine regions which were vacant of inhabitants as the ice sheet was just in process of receding from the high grounds of central Europe, and no previous occupation of any description has hitherto been proved.

After occupying the Alpine regions they passed into France and can be traced as far as Brittany in the north, and in the south towards the western extremities of the Pyrenees. The greater portion of the French peasantry are still of this type, as they occupy all the high ground of mid and south France. They crossed the channel into England, where these round-headed people appear to have been still in the Stone Age of culture when they first arrived; although it was originally supposed that they had introduced the bronze culture into this country. They did introduce agriculture, as also the custom of burning the dead, and of using round barrows for their burials instead of the previous long barrows. This habit of burning the dead was unfortunate for archæology, although it gave to that science many pot beakers and vases in which the incinerated bones were interred. In the long barrows of the previous period the skulls that are found are invariably long in type.

According to Professor Ripley these round-heads also passed into the Scandinavian Peninsula, where evidences



of their round skull form can still be traced in the midst of the very pure long-headed race that lives there. Evidence of the same sort may also be found in the islands off the coast of Holland, as also in small pockets in Denmark.

From the Alps they passed into Italy and founded many lake dwellings in the lakes and swamps north of the Po. It may be, as the Germans say, that they were largely at this time of Nordic race, owing to some previous conquest by this energetic people. At any rate they must by now, however they acquired it, have spoken an inflectional language, as we know from the Latin and Umbrian tongues which their descendants spoke.

The Romans appear to have built a sort of imitation lake dwelling on the Palatine hill, and their military camps were laid out in a similar style down to the decay of the empire. Similar lake dwellings have been found in Somerset, and were in actual use in Ireland up to the time of Queen Elizabeth. Whether a round-headed people ever actually penetrated into Ireland has been doubted, as so few skulls of this description have ever been found there. The Germans, of course, maintain that the Romans were Aryans; as a matter of fact the Roman skulls that have been found in this country are of the Alpine type, when not of the Mediterranean. To this day the Italians are round-headed down to the Tiber, and long-headed Iberian to the south. The evidence from statues of the Romans is too doubtful to be really satisfactory, as is also the same in the case of the Greeks. It may be considered strong enough to say that there must have been an infusion of Nordic blood in both Greeks and Romans, especially in the patrician classes. According to Gunther and other German authors, the decay of the Roman power was due to the gradual breeding out of this strain of the powerful leading race, and the same



is true of the decay of the Greeks. In Greece we find a mixture of round-heads and long-headed Iberian in the same way, with a preponderance, on the whole, of the round-headed type. The Albanians are particularly round-headed, and are a very ancient people and must have entered Greece in very ancient times. We know from the skulls that have been found in Crete and carefully measured that the round-heads must have infiltrated into this island in early Minoan times.

Both Greek and Latin are undoubtedly Aryan tongues ; so, on the face of it, it would appear as if there were a very strong argument for the original inventors of these languages having been round-heads. It appears, however, that it is quite probable that in both the case of the Greeks and Romans a conquering race of fair Nordics may have imposed their language on the conquered peoples. In the case of the Greeks we have the Achaians, and afterwards the Dorians, coming down from the north and taking possession of the country. They always represented their chief gods as being tall and fair, and this was the Greek ideal of beauty. The Spartans were especially race-conscious, as the Germans call it, and strove by every means in their power to keep their people efficient and healthy. Brasidas said, "We are few in the midst of many foes." According to Plutarch, the Spartans were the first to seek to improve the breed not only of dogs and horses but also of men. If a child was born sickly, it was their custom to expose it in the open, usually fastened to a tree branch, until it died. If a man had four or more children he was made free from taxes ; if a marriage was childless it was dissolved ; unions with worthless women were punished. There were punishments for emigration, for not marrying, and rewards for large families. Other methods for making their young men into strong and vigorous soldiers were in common use and are well



known to most schoolboys. It is time that we, too, should commence to think on the same lines. Their women are said to have been exceedingly beautiful and usually of a blond complexion.

Tribes of Nordics must have passed down from the north as they did again in later times ; probably they took down with them a large admixture of round-headed peoples from the Danube basin, where they had settled after passing over from Asia Minor.

A particularly tall branch of the Alpine race is that known as the Dinaric. Gunther would maintain that the Bavarian South Germans are of this race ; more probably they are a mixture of Alpine with Nordics.

Where we get such a mixture as in the North of Germany, or in South or East Germany, we invariably appear to see that the long-head is being replaced by a more round-headed form, so that the mixture can only be detected by taller stature and a fairer complexion.

The primitive tongues originally spoken by the Mediterranean and Nordic races, as well as by the Finnish tribes, were very probably defective and clumsy, and when new and improved languages came with the conquering tribes there would be no great difficulty in the conquered taking over the new languages, with, perhaps, slight changes owing to the preference for some of the types of construction peculiar to the displaced languages.

Basque, which is, along with Hungarian, Finnish, Turkish, and Esquimo, a still existing specimen of the original language of Europe, is very defective in many respects. The verb is hardly to be distinguished as a separate part of speech, so that some authorities have said that a true verb was not present in Basque : the verb is replaced by the way in which nouns are used, and the context. Words for generalized classes of objects are missing : they have words for different



trees, but no single word to denote the idea of a tree as a class ; that is, there is a word meaning an oak, but no word that you could use for an oak without distinguishing it as the particular tree you know as an oak. There is no word for washing as distinguished from the part washed. Words are run together into long descriptive words in a much more pronounced way than is ever done in English, or even in High German. This is what we mean by agglutination, and there is a very good example of it in the name of a Welsh town, usually known for short as Llanfair P.G. The full form is Llanfairpwllgwyngyllgogerchwyrndro-drobwlltysiliogogogoch. Translated this means Llan-church or village ; fair-St. Mary ; pwll-pool ; gwyn-white ; gyll-hazel wood ; go-hard ; ger-by ; chwyrn-swift ; dro-whirl ; bwell-pool ; tysilio-St. Tysilio ; gogogo-jocular repetitions ; goch-red or ruddy. So we can more freely translate it into English by " The church or village of St. Mary near the pool of the white hazel wood, and hard by the swift red St. Tysilio whirlpool. The language is Aryan, but the form is that of some agglutinative tongue which has been lost.

The Armenians are distinguished by an extreme form of round-headedness, and it is probable that the Alpine race of Europe passed through Asia Minor in its passage to the backbone of Europe, at the close of the Ice Age, and so came to fill up the vacant lands in the Alps. Perhaps, originally, they came from the roof of the world region, where they would be in contact with other Asiatic round-heads, such as the Mongolians.

The Slavic race penetrated into Russia in historical times, displacing the Finnish tribes and perhaps some Hun tribes left there after the passage of the Huns in the times of Attila. Later in the Middle Ages the Tartar invasions would bring many more round-headed



people to add to their racial type. The round-headedness of the Russian people has been gradually increasing in density from the Middle Ages, as is shown by the examination of the skulls in their cemeteries.

The round-headed or Alpine race occupy the whole of Central Europe along the Alps, into France, along the Pyrenees, and into Brittany. They occupy the hilly country as if kept out of the valleys by a stronger race. The Dinaric race are pronouncedly round-headed, as are the Armenians, and take their name from the Dinaric Alps; they are a well-built and energetic race of people as compared with the other branches of the Alpine race.

According to Gunther, the Alpine race are reflective, hard-working, and narrow-minded. They are said to be inclined to a superstitious type of religion, conservative, and self-righteous. They display little originality or enterprise, preferring to plod along and to become wealthy by dint of small savings. They make good subjects owing to their patience, but require energetic leaders; politically they tend towards democratic ideas, and, in the East Baltic man in particular, tend to be nihilistic. They hate anyone better off than themselves, and are not too inclined to fulfil their obligations. The Alpine woman is even more given than the man to plodding industry and soulless toil.

The East Baltic man, living patiently and contentedly, may change his taciturnity amongst friends into a lively flow of speech with a wealth of words, and may display imaginative powers breaking out in all directions, and ever at work on a welter of images, his mind wandering off into vague, ever-changing plans for the future and the craziest ideas. Sometimes he appears to be a confused, rambling dreamer, in which his characteristic irresoluteness and lack of sense of reality can be seen. He puts everything off on the shoulders



of Fate, and ends up with a feeling of gloom as if there were some unavoidable fate hanging over him. He is distrustful of strangers and inclined to show cunningness in his dealings with them. These East Baltic people are also said to have a tendency to dirtiness and carelessness in their surroundings. They have a gift for music and the histrionic, and are good observers of human nature. All of which is a very unflattering picture of a race which must make up a good deal of the German nation.

The name Celt was first given to the Alpine race by the Romans, and is still so used by many continental writers ; our use of the name appears to be a mistake.

The Mediterranean race is painted by all observers as passionate and excitable ; their spirits are quick to rise and as quickly sink ; often talkative and eloquent, but inclined to be shallow and superficial. This race is not as hard-working as the Alpine, and is often lazy, and enjoys life more. In politics they show little regard for law and order, and are fond of change. Mentally they are more superstitious ; it has been remarked that the Nordic north became Protestant owing to their intellectual urge, combined with a dislike for authority ; whereas the Iberian south, of a more supersititious and child-like cast of intellect, preferred the more dogmatic and ornate, with a belief in miracles, of the Roman Catholic Church. In my time we have seen many extreme examples of revivalism in the Welsh sects ; and we have heard of lights being seen to hover over the chapels where these revival meetings were taking place. The Irish, too, are well known to be partial to miracles, and for similar traits of superstition in their characters. True, it is not always the man of an Iberian appearance who shows most pronouncedly this type of mental quickness combined with more or less instability of character, it is quite often a man of Nordic appearance. It is



only after a long experience of different races of men that you can appreciate that there is some sort of agreement with this picture.

Of the Nordics it has been said that the fairy tale prince, or hero, is a good representative: loving warfare, hunting, and adventure, but not so inventive of tricks and strategy, less prone to cunning and guile; loving to play at war as if it were a game; disdaining to take his enemy at a disadvantage; often giving the appearance in these stories of being somewhat stupid, and of lacking in foresight; but on the other hand of being more constant, and less changeable, and hence of more frequently muddling through. In warfare his great stature and staying power made him the terror of the south. Gunther says that we may take judgment, truthfulness, and energy as the traits which most mark out the Nordic man. It is by mastering his own nature that he comes to his power of judgment, and keeps it, standing as a free man over against himself, and still more over against the influence of others. He feels a strong urge towards truth and justice, and shows therefore a practical attitude of weighing which often makes him look cool and stiff. His inclinations are always towards prudence, reserve, steadfastness, calm judgment. The sense of reality prevents him from being too superstitious, but this combined with a certain recklessness drives him on to take risks, so that he is prone to risk his life unduly, and he is often in consequence a reckless gambler, ever seeking to compete in boldness and recklessness with his fellows. This spirit of emulation leads him from the country to the town, where there is more opportunity to rise; his adventurous spirit draws him to a sea life, and so to emigration.

The net result of the above leads to a constant flow of Nordic types from the country to the town, and from the town to foreign lands; so we tend to get an



undue loss of these types from emigration, as well as in war.

The Nordic upper classes in the Middle Ages developed the ideas of knightly chivalry amongst themselves, and this, combined with the northern respect for women, has led to much of our sentimental literature. As they were accustomed from very early times to Things and tribal councils, the creation of our elective types of government came naturally from their hands. Owing to their predominance at the head of most European Governments they have had more to do with the political development of Europe than any other race. This fact, along with their strong inclination to keep treaties inviolate, and to keep faith, was leading before the war towards a codification of the laws of war and international relations which was promising great things, when the drastic and misguided ambition of a supposedly Nordic nation threw everything into the melting-pot again.

According to the investigations of Odin, the most creative men of France come from the districts of greatest height, longest skull, and fairest colouring. Galton's inquiries tend to show that the more Nordic parts of England have produced far more creative men than the less Nordic.

It is said that the north-west of Germany produces the lowest criminal percentage, and as you go south and east towards the Alpine and Slav populations the figures for crime begin to rise. In north-west Germany dangerous bodily wounding and fraud are rarer, in Scandinavia fraud and theft. Ploetz ascribes to the Nordic race "a greater regard for the neighbour's person and property." One is struck in all classes by a greater bodily cleanliness and by their delight in bodily exercises.

You may say that the Nordic race appear to be more grown up than the Iberian, as in the same way you



might suggest that the female is less of an adult than the male.

These Nordics developed their language out of the agglutinative primitive languages that were common to all the Neolithic languages of Europe. They may have been originally related to the Solutrean horse hunters of France ; if so, they followed the wild horse in its migration towards the steppes of Russia. According to the German they began to develop their languages first in the South European plains, and as the Ice Age receded, along the shores of the Baltic. The north and east of Russia were still occupied by their near relatives and neighbours, the Finns, who continued to speak an agglutinative tongue. Some of their tribes passed through the south of Russia towards Persia and India. We have a sign of their passage in the names of the rivers which have Don in their names : Donau, or Danube, the River Don, the Dneister, or Danastrus, Dnieper, or Danapris—words which come from the Persian *danu*, meaning river, in the Finnish Ossetic language *don*. Central and Northern Russia were still inhabited by tribes of Finnish-Ugrian languages in Herodotus' time, where they must have come into close relationship with the Hindu-Persian tribes on their passage towards India.

As they were at first hunters of the wild horse, and later became herders of horses and cattle, so at first they would live largely on the milk of the mares and later on that of the cows. At first they would use the horse for food and milk only, and later they would learn to use it harnessed to their chariots, using the cattle for the slower-moving wagons. As the original horse was a very small animal, it would only be later that they would be able to use it for riding as a war horse. When they migrated into Persia and India they took the horse with them, as they also took it into North Europe. We know that the horse was held as



a sacred animal by the Germans of the times of Tacitus, as we also know that it was held in religious veneration by the Vikings, and formed part of the food at their religious feasts. The same was true of the Shepherd Kings who over-ran Egypt, and evidence of a feast of this description was recently discovered in some excavations at Gaza, in the extreme south of Palestine. The same was true of the Anglo-Saxons when they invaded Britain. It was from this religious use of the horse amongst the heathen that the use of horseflesh came to be forbidden by the Church ; as it had a hoof it was forbidden by the Mosaic Law ; on the other hand the pig was allowed, although it was certainly forbidden by the Scriptures ; so, too, was the crab, although it had no scales. The horse was disliked on the double grounds of being forbidden by the Mosaic Law, and, more to the point, it was eaten at the religious feasts of the heathen. Our Saxon forefathers came to carve the white horse on the chalky land of the south, in this country, and it was said to have been displayed on their banners. The more homely wild boar, sacred to Fria, is still eaten by us although forbidden to the Jews, who remain faithful to the Mosaic Law. This animal often served as a crest for the helms of the Saxons, and was supposed to have protective value to the wearer. Probably it was not forbidden by the Church owing to the fact that their converts of non-Jewish race were not easily to be persuaded to give up such a delightful article of diet.

The distinguishing feature of the Aryan languages is the employment of additions to the ends or commencements of root words, sometimes changes in the vowel sound in the centre of the word, to express different relationships and meaning, such as case, tense, person, gender, mood, and so on, in a plain and compact form. Whether due to the marked improvement, or to the impressiveness of the conquerors, most



European peoples appear to have speedily discarded the old for the new language ; thus these inflectional tongues became the forerunners of nearly all European and a good many Asiatic languages. Our own language has evolved in the direction of a greater freedom and simplicity, and would be so much easier to learn in consequence if it were not for the frightful irregularity of its spelling.

The Gaelic language was the first to be spoken in these islands of this new method of inflectional speech, and was apparently spoken by a wide wave of people who spread out from some centre of dispersion. It is distinguished from a second wave which followed it by the use of Q and K sounds, where the following language used P sounds. The first we know as the Gaelic, the second as the Welsh or Cymric.

The Greek explorer, Pytheas, who, commissioned by some Greek merchants of Massillia, or Marseilles, first travelled to these islands about 325 B.C., calls England the Prettanic isle, which shows that he had obtained its name from the second-wave speakers, who used the P sound. If he had obtained it from the Q-speakers it would have been the Kuertanic isle ; in Irish the name is Cruithni ; the archaic form would be Qurtani, and the corresponding word amongst the P-speakers would be Priten, or the land of the painted men, and corresponds to the Picts of the Romans, and the Pechts of the Anglo-Saxons. Britannia is a Latin variant, the more correct form being Pretannia. The Welsh still call themselves the Cymri, and this must have been a more general term for the people from whom Pytheas obtained the name of Prettanic ; it does not follow that the Cymri from whom he obtained the name were in the habit of calling themselves the painted men ; probably the men who painted themselves were either Gaels, or possibly their forerunners. We know that the Picts



of Scotland were in the habit of tattooing themselves down to the time of the late Roman Empire, as a writer of that period, in speaking of a certain legion which was then withdrawn from Britain, specifies it as "that legion which is stretched before the remoter Britons, which curbs the Scot, and gazes on the tattoo marks on the pale face of the dying Pict."

The name of the Cymri appears to be the same name that we meet with in the Umbri of Italy; possibly we may have an echo of it in the name of the Cimmerians, also in the Cymbric Chersonese, and certainly in Cumberland. The Latins can be considered as a Q- or K-speaking people, as the following wave of the Umbri are, or were, a P-speaking people. The Greeks were also a P-speaking nation. The Cimmerians are heard of in early Mesopotamian history as a people descending from the steppes of Russia. In much later times the great Roman general, Marius, won his famous victory against a people bearing the name of Cymbri; these, allied with a collection of Teutonic tribes, were migrating from the Cymbric Chersonese, the modern Denmark, and were threatening to over-run Italy. There appears to be no strong reason for doubting that these people derived their name from Cymri settled in the Jutland peninsula, and who had remained behind whilst their fellows had passed on into Britain. They may at this late date of their last and fatal migration to the south have been mixed up with the Teutons, a later wave of Nordics, who may have come to surround them. They may even have lost their original P tongue and come to speak the language of their neighbours with whom they were in alliance during their journey to the south; nevertheless, having retained their original name, it appears to be probable that they must have retained much of their original identity and a large amount of liberty.



In the early days of Rome and the latter days of Greece two great waves of Gauls, who are described in a similar manner to the description given of the Gaelic conquerors of Ireland, penetrated into both Italy and Greece. Even though their name is similar and their description is the same, it does not follow that they were the same people; still there may have been some relationship. The tribes that broke into Italy sacked Rome, and were only prevented from capturing the citadel by the alarm raised by the sacred geese. Ultimately they settled in North Italy. The horde that attacked Greece appear to have started on their travels from the direction of Bohemia, for long the home of the Boii. These people, under their leader Brennus, forced the pass of Thermopylæ, and attacked the sacred town of Delphi. They proved very formidable fighters with their broad swords, but were ultimately repulsed in a series of battles and skirmishes in which the Aetolians and Phocians attacked them with arrows at a distance. Brennus was wounded and carried away by the retreating Gauls, but soon afterwards killed himself. The Gauls passed over the Dardanelles and ravaged Asia Minor. Some towns were said to have been saved by their gods from the "late born Titans," who burnt temples and warred against heaven; at Miletus some captured girls slew themselves to avoid worse; it is told how a girl would have betrayed Ephesus for the sake of the golden bracelets of the Gauls, and was crushed to death beneath their weight. The inscriptions show that seldom can so few men have created such a panic. The statue of the so-called dying gladiator, now known to represent a dying Gaul, is only one of the many thousands of statues that were created in remembrance of their defeat by the King of Macedonia, Antigonus. After this they settled down in the tract of country which was long known as Galatia, situated round the present capital of Turkey. Each tribe was normally



governed by four tetrarchs, the "kings" whom we hear of being merely the war leaders, as was the case with the Angles and Saxons on their first arrival in Britain. They had a common sanctuary called Drynemetos, possibly, a circular moot-hill in a grove, where a joint council of the tribes consisting of three hundred elders tried criminal cases. The Phrygian peasants tilled the soil for them, and they increased fast, but did not occupy any towns till much later; for long they kept their native customs, a foreign body which the Seleucid empire could not assimilate, always ready to sell their swords to the highest bidder.

An interesting question is the identity of the different tribes which made up Gaul in the time of Cæsar, how many were Gaelic speakers, and which were Cymric peoples. Certainly, the Belgæ, who invaded northern Gaul at a late date and who passed over into Britain and had a town at Winchester, would be Cymric; if so, were any of the other tribes genuine Gaels, that is in speech and as to their nobility? Were the Pictones, a tribe on the western seaboard, in alliance with the maritime Veneti, related to the Picts of Scotland? If they were, did they speak Gaelic, or possibly some language allied to Basque? It is a thousand pities that the classical authors were so little interested in the barbarian languages.

Cymric, or Welsh, must have been spoken up to the Highland line, that is to the Forth and Clyde; beyond, mainly Gaelic, possibly some agglutinative tongue may have still persisted amongst the mountains. The evidence for any such survival is too scanty to be of much use; there are said to be a few Ogam stones which have been found with inscriptions which are said to be in no known language. This Ogam writing was apparently invented for its use in writing messages on whittled sticks; the letters are represented by groups of long and short lines cut on a smoothed



piece of stick or stone, running on either side of a sharp edge. This would prove much easier to write on a piece of stick, smoothed on two sides with a sharp edge between on which the lines could easily be cut, than would have been the comparatively cumbersome Latin letters. The use of this species of writing is confined to the Gaelic tribes, and is supposed to have been invented in Ireland. The inscriptions that have been found are mostly funereal and have been found on many Maens or standing stones, like our grave stones, in Anglesea, South Wales, and one in the Roman town of Silchester. Professor J. E. Lloyd, in his history of Wales, concludes from the evidence of these stones that North and South Wales were inhabited by Gaelic-speaking peoples up to the decline of the Roman power in Britain. The older view was that these inscriptions were made by colonists from Ireland who had settled here and there on the coasts of Wales. These Gaelic speakers were only finally driven out by the conquest of Cunedda and his sons. This prince appears to have ruled over a tribe of P-speakers who lived on the Forth, or at any rate north of the wall. As was often the custom in late Roman times when a tribe found themselves uncomfortable owing to the constant attacks of savage raiders, they asked the Roman Government to assign them new lands where they might fill up empty territory which had been abandoned owing to warfare. In earlier times the Romans had maintained two legions on the borders of Wales, the 2nd Augustus at Caerleon, and the 22nd at Chester. The latter appears to have disappeared about the time of the great invasion in the Emperor Valentinian's reign, and the former had been moved to Portus Rutupensis, at the extreme east of the south coast, to watch for Saxon raiders. Having at this time no force that could be easily spared from the defence of the north and the Saxon shore, they



appear to have been glad to bring Cunedda and his tribe down to mid East Wales, and to settle them amongst the Cymric speakers of that district. Cunedda in a long series of campaigns gradually drove out, or conquered, the Gaelic speakers of North and South Wales. It is supposed that there were still Gaelic speakers in Wales up to the time of the Norman Conquest.

Now, the Welsh are all P-speakers, and we have Map instead of Mac, as in Apsimon, short for Map Simon, Pryce short for Map Reece, and so on. Pen as the name of a mountain instead of Ben ; as I have said before, the similar Greek speakers called this the Prettanic Isle, which the Latin Q-speakers changed to Britannia. From the point of view of the fellowship of man, we should prefer that these ancient controversies as to race and former wrongs should cease.

But man is a child of nature, and, like all children, his imagination is easily fired by the romance of the past. He still obeys the impulses of the primitive creatures from whose ranks he has only partly risen, and, like them, tends to split up easily into new races. Nature has placed within her children a tendency to form new varieties and to cling to them when formed so as to assist in her work of forming new species. This is at the root of all this hate between nationalities, and as nature has a deliberate object in producing this so as ultimately to improve the races of the world, it is of doubtful advantage to cry out against it. It is probably better to admit it as a natural fact, to take advantage of it, and to strive to increase the efficiency of the machinery. As the brains of the leaders of mankind increase, it will be possible to work this particularism along rational lines, so that we shall have many varieties of mankind working to increase their own efficiency, and not to impede the others. We find that nationalities can only be



held together by force; left to themselves they ultimately tend to fly apart as if by some centrifugal action. The Nordic races in particular appear to have this tendency strongly developed: the ancient Greeks could only unite for a common object with great difficulty; so, too, the Anglo-Saxons were only united for a common purpose when threatened by a common enemy; the danger passed, and they soon split up into the weak heptarchy. The United States, as soon as the common danger of the French in Canada was removed, split off from the home country. In our own day we have seen the South of Ireland split off from Ulster and the remainder of the British Isles. The Colonies are only held together somewhat weakly by a common allegiance to the Crown, and are very liable to allow Parish Pump politics to blind them to more important issues of common union and action. The spirit of a narrow nationalism is slowly growing stronger in both Wales and Scotland, and unless carefully watched may do great harm in the future. For all of these reasons it is wise to deprecate the too virulent manifestations of the spirit of a narrow nationalism, but that is no reason why we should not understand it, sympathize with it, and even encourage it when it works for the common good of the community, and not merely for disintegration.

The question of the origin of the Aryans is important from the point of view of history and archæology, but from the present national point of view it is only amusing and pathetically childish. The Germans may call themselves Aryans if they so please: if these ancient peoples were as they say Nordics, then they have as large a percentage of Nordic blood in their veins as any other nation, with the exception of the Scandinavians; if, as some of the French would maintain, it was the Alpine race who invented the inflectional languages, then the Germans can claim to



have as large a percentage of this round-headed peoples' blood in their veins as have the French. They can claim to be Aryans on either side.

It looks as if the round-headedness in Germany were increasing, as it has done in Russia. This might be explained on the theory that a round head is more capacious than an oval one, or that it is the simple fact that a mixture of round and oval becomes more round owing to the latter being a dominant characteristic, whereas lightness of complexion may on its side prove to be dominant in such a mixture. It is usually thought that a blue eye is a recessive as contrasted with the brown dominant, but this is not proved conclusively.

According to Gunther, the decay of nations is to be traced to the gradual denordication of the ruling classes: as these become less and less pure Nordic so does the creative and adventurous nature of the leaders of the people decay. Such was the history of Greece, Rome, Spain, and Persia. There may be something in this theory, but to my mind he gravely underrates the capacity of the other races, the Alpine in particular. It is doubtful whether the Alpine race did not originate the Aryan languages, and in any case the Romans at the time of their prime were largely an Alpine people, and the same may be said for the Greeks. As for the Mediterranean race, they were the originators of a good deal of the ancient civilizations and culture, and anyone daring to say that they were on the whole an inferior race would be somewhat venturesome. Intellectually, the Jews at the present day are the most acute-brained people in Europe, and for the most part they are largely Mediterranean in origin. Owing to their long experience of town life under bad conditions, they are able to survive and prosper in the fight for existence better than the other races under similar conditions. This long



experience of town life, helped on by their dowry system in marriage, has led to a considerable sharpening of the wits of the better classes amongst them, the daughters of the successful being enabled to obtain their husbands from the more successful. The principle in question is on the lines of—to him that hath shall be given more, and from him that has little shall be taken away that little which he hath. Racially from such measurements as I have been able to take, I should say that they are far from being purely Semitic; they are frequently very round-headed and sometimes light in complexion, which shows a mixture with the Slavs of Russia and the Nordics of the Baltic. The facial features show a common type amongst large numbers, particularly as to the nose, but that is natural considering the close breeding amongst themselves. The Semitic nose is well shown on some ancient Egyptian paintings of tribute bearers and prisoners, so it has been a persistent characteristic through the ages.

The original Jews were a mixture of Semitic people with the Amorites; these latter are supposed to have been originally a Nordic race who had descended into Palestine about 1500 B.C. They were in alliance with the Hittites, and may have had some relationship to the people of the Shepherd Kings who had ruled over Egypt for some generations. A site was recently excavated near Gaza where there was evidence of a religious feast at which the flesh of the horse had been consumed.

One of the Amorite kings mentioned in the Egyptian records bore the name of Jam, and as Ben was the name for a clan, it is supposed that Benjamin is a survival of this king's clan name. Like the other Nordic races, they worshipped a god that bore a hammer and must have been a god of thunder, like Woden or Thor; Zeus and Jupiter are synonymous



names no doubt for the same god. The Egyptians called them the Amurru, and record their having made attacks on the Egyptian frontiers in the fifteenth century B.C. Thus even at the commencement of their career the Jews must have had some considerable infusion of non-semitic blood in their veins. In Russia a whole tribe of Tartars were converted as a tribe to Judaism. For all that, they are at the present time a fairly homogeneous race, and being so exclusive they have a better title to the name of a race than have most peoples.

Since this was written the following letter, which gives a slightly different picture, has appeared in *The Times* :—

### THE JEWS

*To the Editor of The Times*

SIR,—Recent work at Gaza has enabled us to estimate better the make-up of the Jewish people. The old Amorite of the Copper Age was an aquiline fair man with blue eyes, who had expelled the Neolithic folk. The Amorite was at about 3000 B.C. driven up into the hills by the Bronze Age Canaanites from the Caspian side of the Caucasus, a people skilful in rock working. After a brief Egyptian conquest, another people from the Caspian basin came in, short, with coarse features and thick hair, who were horse-riding shepherds, the Hyksos. All of these formed the mixed substructure over whom the Hittites were dominant.

Into this mixture came a potent family from the Iraq desert, headed by Abram, about 1800 B.C. They partly entered into the mixture already in the land, forming Moabites, Ammonites, and other tribes. After living for a time on the Egyptian border they pushed in on Canaan, already ruined by the Egyptians, and entered on by fair European Philistines. These were all so mingled that Ezekiel calls the Jews Amorite and Hittite. Their distinctive link was religion, based on North Arabian ritual and monotheism. To all future ages their mark has been the acceptance of the Pentateuch, however they differ in appearance.



The upper classes were segregated by the Babylonian captivity which only allowed of proselyte mixture. Those who went to Egypt mixed with various Hellenic peoples. The scattering under Roman conquest doubtless brought in Spanish, Moorish, and other proselytes. Those who stayed as peasantry in Palestine are ancestors of the present people.

There is thus no Jewish race except as a religious confederacy. Those who accept their religious books (the Old Testament) are their nearest religious heir. They resemble the English in being distinguished by qualities which have been naturally selected from a variety of sources. Both Jews and Englishmen are examples of the adaptable advantages of a mixed ancestry, and "pure races" have little chance against their intrusion.

Yours obediently,

FLINDERS PETRIE.

*University College, London.*



## CHAPTER IX

### THE GOTHs

THE aristocracy of Europe is still very largely Nordic, and whether we consider them as being the real Aryans or not, their history is of great interest to us all, as we undoubtedly are very largely Nordic, and owe most of our characteristics as well as our language to that race. To have blue blood in your veins is a Nordic peculiarity, as in the darker Iberian race the darkness of the skin hides the blueness of the veins on the back of the hands. So striking was the beauty of the fair northern complexion considered, in the Middle Ages, that even Jesus Christ has always been depicted as a fine specimen of this race ; whilst the two thieves are depicted as dark, which racially they must have been. In the Irish epic poems the hero is always depicted as a fair tall man, whilst his servant ran behind his chariot with a close-cropped black head, and is described as being of short stature. So universal has this admiration of fair-headedness and tall stature been, that it must have had a good deal of influence through sexual selection in increasing the amount of fairness amongst the successful of the world.

In view of this exalted position of the personal characteristics of the Nordics, it is of importance to understand how they came to occupy such a position in the estimation of Europeans as a whole : this may be done by considering the history of the Goths who first came to sack Rome.

The Greek Pytheas, whom we have already mentioned, informs us that the Guttones lived in what is now East Prussia, near the Frische Haff. The elder Pliny, A.D. 79, again mentions them as living in the



same neighbourhood ; and a generation later they are said by Tacitus to be living in much the same neighbourhood, along the shores of the Baltic.

According to their own annals, or folklore, as handed down by Jordanes, they set out on their travels from the island of Scanzia, that is, from the Scandinavian peninsula. According to the poem of Beowulf, Goths were living in what is now Denmark and Sweden at a period shortly before the Anglo-Saxon conquest of Britain. The island of Gothland was originally called Gutaland ; so, although the Goths of Jutland and Sweden may only have been distant branches of the same family, the island of Gothland must have been a genuine home of these wandering people.

About A.D. 200 they appear to have migrated to the shores of the Black Sea, where, possibly, they may have found another branch of their race settled for a long time, called by the Romans, the Getae. Those of us who have toiled through the poems of Ovid will remember that he spent years of sad exile amongst these people. He gives a description of their country which appears to us to be more suited to a description of the polar regions than to the comparatively southern climate of the mouth of the Danube. Why the Emperor Augustus should have sent him there is unknown, but it has been conjectured that it had something to do with his friendship with Julia, a niece of the Emperor. If everything is true that is said of this lady, she was a very dangerous person to have anything to do with on the part of an impressionable poet. She was afterwards exiled herself and probably richly deserved her fate.

About A.D. 250 the Goths defeated an army under the noble Emperor Decius, who was slain in the battle with his son. Amongst other raids into the lands of the Roman Empire one of the most famous was when a fleet of these fierce barbarians sailed through



the Bosphorus, past the walls of the capital of the Eastern Empire, and spread fire and bloodshed along the shores of Asia Minor, finally coming to anchor in the port of Athens. Although they sacked Athens, they appear to have spared the buildings and monuments. There is a tale that they collected the books from the libraries and all other writings that they could come at, intending to burn them, for they had a superstitious dread of anything in the form of writing, as their own writing was a secret art of their magicians, called runes, and was used principally for charms and incantations. The same sort of runes were used by our own ancestors and the Vikings for inscriptions on swords. An aged chief, however, famous for his wisdom, persuaded them to spare the books, on the grounds that as long as the Romans spent valuable time in reading and writing they need never fear them in war. This sounds like an argument of persuasion, and perhaps he thought more of the books than he professed; however, they did spare them, and in this showed themselves to be more civilized than the Saracens, who burned the library of the Ptolomies at the capture of Alexandria. In spite of this sneer at learning, it was a man of letters, Dexippus, who collected a band of the citizens and burned many of the Gothic ships in the harbour. After doing much damage in Greece, they were finally defeated by the Emperor Claudius Gothicus.

About A.D. 350 a king called Ermanaric came to reign over the Ostrogoths, and rapidly built up an extensive Empire; he has been called the Alexander the Great of the Goths. He ruled over the country as far as the Esthonians, on the gulf of Bothnia. In his old age the Huns began to press westwards from the Asiatic steppes, as you may read in some fascinating passages of Gibbon's *Decline and Fall of the Roman Empire*. Part of the Ostrogoths submitted



to the Huns, and some fled westwards to the Visigoths. Through nearly all their history the Goths were divided into these two divisions, and the relative positions of East and West kept true to their names, which signify East and West Goths. Originally these names had reference to their relative positions east and west of the River Dnieper. In the end the Visigoths penetrated into Spain, whilst the Ostrogoths ruled in Italy.

After the defeat of the Ostrogoths by the Huns, Ermanaric is believed to have committed suicide; but, according to the folklore story, the king sent his son as a go-between, to woo a beautiful maiden called Swanhilda, so that she might prove a bride for his old age. As is not surprising, the young man fell in love with her and took her for his own wife. The old king was furiously angry, and, as the Anglo-Saxon poet calls him, "The Furious Traitor" enticed the maiden by fair words into his power, and then had her torn to pieces by wild horses. Her brothers in revenge cut off the hands of the king and left him to linger on until he died in his hundred and tenth year.

For about a century the Ostrogoths were tributary to the Huns, and fought in their armies against their fellow countrymen; a few broke away and joined the Visigoths, who were at that time in Southern Gaul. After the death of Attila, the great Hunnish king, they regained their liberty. The Huns made an effort to reconquer them but were defeated in a great battle by King Walamer. On the day the king's brother, Theodemer, heard of the victory, a boy was born to him, whom he called the "child of victory"; this was the great Theoderic (Thiudareiks), who came to rule over Italy and proved one of the best rulers that country has had until modern times. He was immensely superior to many of the half-barbarian Emperors that they had had for many years, often half-civilized barbarian soldiers of fortune.



To return to the Visigoths who were living in Dacia, just north of the Danube, when they were being heavily pressed upon by the Huns, they appear to have been seized with a panic, and appealed to the Emperor Valens to be allowed to cross the fortified River Danube, and to settle in the more or less empty lands on the Roman side. The emperor, attracted by the idea of filling up vacant lands with brave and hardy settlers who might add to the power of his armies, very foolishly as the result was to prove, allowed them to pass. After their passage it was found to be difficult to provide food for such enormous crowds of men, women, and children. In addition they were very badly treated by the Imperial Governors, the natural result being that they were speedily driven into open revolt.

In A.D. 378 the Emperor Valens was killed in a great battle at Hadrianople, and his army cut to pieces. Thus for a second time an emperor and his army perished at the hands of these fierce barbarians. Many thousands of the sons of Gothic chiefs had been handed over as hostages during the previous years, and these had mainly been sent to the eastern parts of the Empire to be educated, so as to be farther away from their countrymen. In the interval between the battle and the appointment of a new emperor, these were all massacred at the order of the minister of war, Julius, with the consent of the Senate at Constantinople.

The new emperor was Theodosius, a son of that Count Theodosius, who had been sent by the Emperor Valentinian from Gaul to reconquer Britain when it had been overwhelmed by the united Picts, Scots, and Saxons, who had reached down almost to the neighbourhood of London. This disastrous invasion is perhaps the time when Saint Patrick was carried off into slavery; some say from a town in the midlands, although most appear to think that his home was on the banks of the Severn. It is also of interest to us



as from that period the first Teutons were settled in this country.

The Emperor Valentinian transferred over to Britain a certain King Fraomar, chief of the Buccinobantes, a section of the Alamanni. These people would be settled somewhere in the recently devastated regions of the north, and may possibly have actually provided the first nucleus of the future Northumbrian kingdom, which was afterwards founded by the Angles. The new emperor, after a good deal of fighting, was able to make peace with the Goths, and to take large numbers of them into his service. He treated them well, and they were of great assistance to him in his civil wars with the western usurpers, Maximus and Eugenius.

After the death of Theodosius, his son, Arcadius, was made Emperor of the East, and the other son, Honorius, Emperor of the West: both were mere puppets. There was immediately an outbreak of jealousy against the Goths, who had been treated with such favour by the late emperor. This feeling of jealousy had been smouldering for a long time, and the outcry to drive them out was so strong that, although the ministers resisted the extreme demands to have them driven out, they were forced to reduce their pay and to make them feel that they were no longer the favourites that they had been under the late emperor. The result was the immediate rebellion of the Visigoths on the plea that the treaty had been broken. A young chief of the great family of the Balthings had been in Roman pay, and had already done good service; as now he could no longer look forward to any promotion, he joined in the revolt, and was immediately elected king. After much plundering and devastation in Greece, this King Alaric was driven into a corner in mountainous country and hemmed in with palisades and trenches; however, he broke out through the



lines, and after a wonderful march crossed the gulf between the Peloponessus and the mainland, and escaped from the snare so skilfully set by the great general Stilicho. Stilicho was, however, destined to meet him again, and when Alaric invaded Italy in A.D. 400, in Stilicho's absence in Gaul, and for a year and a half devastated the country to the north of the Po, he was surprised finally and defeated at the great Battle of Pollentia. This was on an Easter Sunday, and Stilicho attacked them expecting that they would be engaged in religious exercises. They made a desperate stand, but were finally defeated.

It is necessary to explain that they had been converted to Christianity whilst still north of the Danube, and before Valens had admitted them to the territory of the Empire. Unfortunately the Arian variety of Christianity was popular at that time, and Bishop Wulfila, a Goth himself, happened to have been converted to Christianity by members of the Arian persuasion. This sect held that Christ was not literally the son of God, but a created being like any other man. Although in other respects good Christians, it is only natural that such a deviation from the orthodox view came in after days to cut them off from other Christians more effectually than if they had remained heathen. Wulfila translated the Bible into Gothic; instead of using the runes which they already used, he translated it into Gothic by the use of Greek capital letters, such as were commonly used at that time for important religious books. The runes themselves had been derived from Greek letters, but had been a good deal altered in the process. He evidently knew the runes himself, as when he was in a difficulty to express the Gothic sound by a Greek letter he used a rune sign. The Gothic Bible is a very important book for the study of the ancient speech of the Goths, Anglo-Saxons, and kindred people, as it is so very



much earlier than any other writing in these languages. Wulfila was born between A.D. 310 and 311.

Stilicho again defeated Alaric at Verona, after which Alaric was forced to withdraw into the north for a time.

In the year 406 Italy was suddenly overrun by a huge army of Vandals, Sueves, Burgunds, Alans, and Goths, under a king, called Radagais. Possibly he may have been an Ostrogothic king who had led his people in revolt against the Huns in the region of the Black Sea. These were heathen, and it was believed that the king had made a vow to capture the city of Rome, and to sacrifice the senators to his gods. Stilicho, with difficulty, was able to collect an army, but finally whilst Radagais was besieging Florence, he was able to surround his camp with a vallum and palisades, and thus to compel him to surrender. The king was beheaded and those of his men who were not slain were sold into slavery.

Shortly after this, Stilicho was assassinated by the foolish Honorius, whose ministers were now stupid enough to dismiss all the Gothic officers in the imperial service and to pass a law that no Arians were to be allowed in the military service in the future. At first the dismissed Goths were afraid to show resentment as their wives and children were scattered in different Italian cities; however, as the mobs in these cities immediately began to massacre these hostages, the difficulty was soon removed. As a result Alaric was immensely reinforced and was able to march over the north of Italy in a sort of triumphal procession. After passing Ravenna, which was the seat of the court, and was too strong to be attacked, being defended by extensive swamps, he came to besiege Rome. After the city had been starving for some time, envoys were sent out to sue for terms. When these envoys boasted of the large numbers of the defenders, Alaric is said to



have answered laughingly, "The thicker the grass, the easier it will be to mow."

Rome was captured at the third attempt, and the news of this event spread dismay throughout the civilized world. This happened on August 24th, 410.

Alaric then marched to the extreme south of Italy with the idea of capturing the African provinces which still were the granary of Rome. He was here taken ill and died. The Gothic army forced the huge multitude of prisoners that they had with them to turn aside the River Busento; there they buried the body of their king, with a huge treasure in its bed; then turning back the river so that it would flow over his grave, they slaughtered all the captives who had assisted in the work in order that the secret might remain for ever unviolate.

Shortly after this the Goths left Italy with a commission granted by the Roman government to fight against the usurper Jovinus. They made themselves masters of Southern Gaul, but were afterwards driven out; then they marched into Spain and conquered it. Shortly afterwards they returned to Provence and ruled over it and Southern Gaul for a long time. They took part with the Franks, Alans, and the Roman troops of Aetius in the great Battle of Chalons against Attila; their king being slain in this momentous battle.

The Vandals, a people of similar race to the Goths and speaking the same language, had been in possession of Spain when the Visigoths invaded it and drove them out. They went to Africa, which they ruled until they were defeated by Belisarius. Whilst ruling the African province their fleet attacked Rome, which they captured and sacked more drastically than had Alaric. Amongst other booty they carried away the famous branched candlesticks which had been taken from the Jews at the capture of Jerusalem by Titus.



Belisarius re-took the African province for the Eastern Empire, aided by Hunnish cavalry bowmen, whom he had recruited for his own private *commitatus*. In this he took a leaf out of the practice of the Teutons, with whom it was a common practice for a leader to recruit his own body of housecarles, or chosen companions, who were accustomed to think it a disgrace to survive the death of their leader in battle.

The reason why the Huns were so often victorious in their battles with the Goths appears to have been their expert use of the bow. This weapon was made in the Tartar fashion of goat's horn and sinew, lacquered together into a strong and elastic weapon. The Tartars of later days, who were of the same race, were accustomed to use a shorter bow on horseback and a longer and more powerful one on foot.

The Saracens were, however, the ultimate conquerors of both Africa and Spain. In this latter country, however, the Gothic nobles continued to maintain their blood and independence in the mountains of the north-east, until they were finally able to lead the Spaniards to victory. At least it was a customary boast of the Spanish nobility that they were of Gothic blood, until modern times.

During the long rule of the Goths in Spain before the Saracen conquest they long retained their Arian belief, and intermarriage between Goths and Romans was firmly resisted. Finally for purposes of policy they gave up the Arian faith; and the system by which the Goths were judged by Gothic law, and the Romans, or Spanish natives, by Roman law, was also changed for the sake of unity; but in this case it was the Roman law that was given up and the Gothic which survived.

The Ostrogoths, under the great Theoderic, ruled in Italy for thirty years, and that great king, as I have



already said, proved to be one of the best rulers that country was to have, until, perhaps, the advent of Mussolini. Mussolini has most nearly resembled him in his care and restoration of the ancient monuments of Rome.

After the downfall of the Ostrogoths in Italy, a new army of a more savage Nordic race swept over the land, by the name of Langobards; these people founded a power which persisted into the Middle Ages.

Our word "bigot" is derived from the name of the Visigoths; but as a matter of fact the Arian Visigoths were anything but bigots for those fanatical times. Truly they stuck to their unorthodox faith for a long time, principally through their pride of race, more than from any bigoted belief in its superiority. It was a Spanish Goth who scandalized Gregory of Tours by remarking that it was a Christian's duty to treat with respect whatever was revered by others—even by idolaters.

There has been much argument as to what were the actual causes underlying the downfall of Rome; undoubtedly the difficulty of finding suitable emperors, except by the trial of civil war, was the great cause of much of their weakness. Originally Julius Cæsar was a representative of the Plebs, or poorer people; like many modern dictators he used the power of the more numerous and ignorant to further his ambition, and over the shoulders of the popular party his successors put an end to the aristocratic Republic, and founded the Empire as a military dictatorship. In later days the emperors gradually came to rely more and more on their Teutonic mercenaries; they even went so far as to forbid military service to any Roman born aristocrat. The proud name of Roman citizen was given to any provincial. So we see that no narrow nationalism could be blamed; rather the absence of such



a spirit of nationalism was a source of weakness which could not be replaced by the widely held citizenship. The rise of Christianity cannot be held blameless in weakening the respect for the combative spirit and for army service. A nation whose citizens are unwilling to defend it is doomed by nature to fall; and later in the Byzantine Empire the huge crowds who flocked into the monasteries not only deprived the Empire of its natural defenders, but deprived the tax collectors of their prey. As the mercenaries had to be paid, and the taxes were overwhelmingly oppressive on those who remained to do their duty, it was a double loss. The prevalence of outbreaks of plague and malaria, too, appear to have swept the population out of whole districts. This along with the depopulation of the constant wars explains a good deal of the weakness of the later Empire: that it held together so long appears to be remarkable.

Looking back at the history of the Goths we see what sort of men our ancestors were; and we can understand the enthusiasm of the modern German for his racial history, even if we do not altogether approve of it. We see what sort of men these collateral ancestors of ours were: good fighting men, of good physique; delighting above all things in war, adventure, and sport; speaking the truth without prevarication, as did the Franks, from whose name comes our expression "frankness"—an embarrassing habit of calling a spade a spade; good to their women folk; wonderfully free from superstition compared with other races, and not unduly thinking of a future world to the neglect of the present; cruel, but not more cruel than was their age; full of racial pride, and eager to keep it pure to pass on to their sons' sons; romantic and sentimental to a fault, as we are. Truly we are not Goths, nor are we their close relatives the Angles and Saxons; but a mixture of many races, as even they must have



been, although not perhaps to the same extent. It is from ourselves and our own race as it is at present that the future race must be built. What is certain is that we cannot stand still. We either progress or deteriorate ; nor is it likely that we can progress as a whole. We must split up into sections in the ages to come : breeding a better race at the top means inevitably that an inferior race is left to breed more freely at the bottom. On the one side you breed a superior type of man, and at the other a multitude of more or less inferior types that breed more freely.

Is it possible to breed such a superior type of mankind? Can we breed a man with a more active and efficient brain, and still keep his body as it is now, or improved? Evidently we should strive to keep the body of the warrior and sportsman whilst we endeavour to increase his mental capacity. This is the ideal for our own race, and the same applies to other races : each must attempt to improve his own model, and strive towards his own ideal. Probably that ideal will be somewhat similar for other races ; but for other races we cannot speak. The tendency will be for the better bred types of each race to diverge more and more, until they are much farther apart than they are now : may this tendency not altogether destroy the sense of fellowship that has come into existence—so largely due to the Christian religion—altogether. In government there should be a strong power at the head of affairs, for the whole world if possible, to keep the peace between the different races and sections of races, and to provide an even-handed justice between them ; leaving them power to work for their own improvement within their own limits.

As I see it, this is the sort of ideal that we are slowly developing along scientific lines of thought : some path of this sort we are destined to tread. The way appears



to be difficult and destructive of much that we have come to hold as our religion and sentiment. Can it? Will it be attempted? Yes, it will be attempted; and it can be done. But it will take—how many generations before we see the first fruits?—We cannot guess. Nor, as far as the validity of my argument goes, does it matter. Perhaps a thousand, or more, years, although long to us, may be but a day in the lifetime of man as a race. Meanwhile we should look to the future, far distant and unimportant to us as it may seem.



## CHAPTER X

### EDUCATION

HAVING done our best to raise a superior type of child, what shall be our method of education? Nothing can be done with the worst type of mental defectives, and very little with a good many who are comparatively bright. The character of the brains of the mass of young children varies enormously; those with superior qualities of intellect are always in a very small minority.

Education is comparable to the grinding, honing, polishing, and stropping which turns the right kind of steel into a razor blade. No amount of education will be able to turn a poor brain into a sharp one. Memory and quickness of thought can be little improved by ordinary educational methods, whereas too much study may seriously impair an originally good memory and quick-acting brain. Many people who have over-studied are conscious of lapses of memory and difficulties in recalling names and words which they know they have at the back of their minds; they feel as if they had lost the key to the particular brain compartment in which they had laid it up for safe keeping. The late Canon Wilson, at one time headmaster of Clifton, who had received an almost exclusively classical education at King William's College and Sedbergh, studied mathematics at Cambridge, and passed as Senior Wrangler; and shortly afterwards suddenly lost the whole of his mathematical knowledge, so that for teaching purposes he had to relearn it as if it were a new subject. Other hard-working students have had the same experience. Actors are in the habit of learning many hundreds of words for each play; afterwards they forget them with the greatest rapidity.



This gift of learning easily is improved by practice if you have a moderately good brain ; some people have the greatest difficulty in learning anything at all in this manner ; some never can ; and others forget as rapidly as they learn. A slow learner may and often does have a more retentive memory than one who learns more easily. Some children are very intelligent at quite an early age, whilst others appear to develop a better quality of brain at a later period. Many people who are very brilliant in school appear to lose this quality and become very ordinary in later life. All these varieties of mental qualities are more matters of hereditary influence than of anything that one can learn at school. In most people there is more difficulty in learning easily as age advances, but there is almost every variety of brain.

It is often difficult to discuss education with a school-master ; as all specialists they may often be somewhat limited in their outlook ; in addition we sometimes experience in their presence a sort of inferiority complex, dating, perhaps, from our own schooldays. But I think I may say that at the present time they have a good deal of distrust of the effect of the system which they are compelled to adopt, owing to the tyranny of the examinations which boys have to pass for entrance to the universities. These examinations are taken by the public as a standard of essential knowledge, without which they are unwilling to accept a boy as sufficiently educated for their purpose. To pass in these examinations it is necessary for most boys to devote all their time to obtaining a sufficient acquaintance with a limited number of subjects which are of little use to them in their future careers. The general result is a cramping of the whole educational system which is most pernicious from every point of view. The ordinary man does not require an advanced standard of knowledge of most of the school subjects ;



what he does require is a smattering of as many as possible, so that he shall not be densely ignorant of any. Examinations are not the evil ; it is the way in which they are applied.

No one will question the necessity of every citizen having a knowledge of the three R's in these democratic days ; to these may be added a sufficient familiarity with the history of your own country and of the world at large ; with this an elementary knowledge of geography is required ; beyond these subjects is a large field.

Amongst really essential subjects with which the student should have, if possible, a more than nodding acquaintance comes first of all a sound knowledge of English in all its branches. He should be able to write it with facility, so that on demand he could write a good essay. Spelling correctly is at the present time very essential indeed ; I hope that this may be much simplified for the children of the future ; at present it requires more time than can be afforded. A reformed spelling is long overdue : the sooner it is taken in hand the better for the language, and the better for the student. The English language contains more words in its dictionaries than any other ; its literature on technical subjects is enormous, and is so important that foreign students requiring to study many subjects are seriously handicapped without a knowledge of this huge language. In its grammar there is less difficulty than in any other language as it has reached to a high degree of simplicity and reasonableness ; its spelling, on the other hand, would be the disgrace of any language, as there is neither system nor reason in its jumble of antiquated, eccentric, and foreign forms of spelling. We are a conservative people to our great advantage, and are disinclined to do away lightly with what has become easy to us through custom, yet we must beware of carrying



dislike of change to the last ditch. We must sooner or later take the reform of our spelling in hand—why not sooner rather than later, and so spare our very young children an intolerable burden, and our older citizens with lapses of memory the annoyance of constant reference to heavy dictionaries? It looks as if it might require a dictator of the stamp of Mustapha Kemal—such are fashionable, and universal suffrage has brought democracy to the verge of bankruptcy. At any rate this and a few other reforms are long overdue. The easiest way would be to decide on the form of your simplified spelling and then to pass a law that after a certain date no newspaper should be allowed to be published except in the reformed script; and in a very short time all our difficulties would have gone. In the Scandinavian countries a reformed method of spelling is now being taught to the students of English so as to lighten somewhat their difficulties; why not let our own children have this advantage? Our language is of great value and it is the most widely spoken tongue on the face of the earth at the present moment; and in spite of artificial languages of the type of Esperanto it is the most useful for intercourse between the peoples of the world, and may go far in undoing the curse inflicted on mankind at the destruction of the tower of Babel.

One step that should assist in bringing about this desirable change would be the teaching of Pitman's system of shorthand to all our children. Shorthand is of great advantage to any person in any walk of life, and it is high time that it was as universally known as ordinary longhand. To learn it so as to be able to read and write the elementary forms should present no difficulty to children in the lower forms of an elementary school. Not only would I have our young children taught this, but I see no objection to their also being taught at an early age the morse code. Why



not? If you intend to teach English you should show the student the elementary methods in which it may be written. Whether they go on to the more difficult advanced studies of the reporter and telegraphist may be left to their later years. Studies like these sharpen the intellect just as much as does the study of a language, and with infinitely less waste of time. A study of Anglo-Saxon might be considered to be an essential for any serious student of English; but the ultra-patriotic Irish and Welsh may be allowed to act as a warning to our enthusiasts against too much overloading of the work of the young. In the possession from early childhood of such a universally accepted tongue as their own, our children have a great advantage over children not so well placed: do not let them lose it through neglecting spelling reform, and a too stupid clinging to old-fashioned weights and measures and currency. The metric system is not perfect by any means; if it could be done the original fault of nature in only endowing her children with five fingers on each hand might be rectified with some trouble by placing two extra digits in our numeral system to go between nine and ten: we should then have a really up-to-date scientific system to build our mathematical studies on, and to lighten the work of our clerks and small shopkeepers. It would also require a new set of calculating machines in our banks. The manufacturers of these might be pleased, and their workmen obtain more employment; but we cannot please everyone.

Our language is spoken in many different ways by people who have been brought up in different localities. You may usually tell from a man's accent the particular part of the country from which he hales; it does not require much thinking to know whether a man has spent his early years in Scotland, in Yorkshire, the Lake District, or Northumberland, London, or Somerset;



his accent gives him away at once. The missing *h* and similar idiosyncrasies of the Cockney are nowadays condemned, although once fashionable in good society ; some other peculiarities deriving from the south would also be for the good of the language if definitely condemned. I refer to the Oxford accent, which I have heard is really an Essex peculiarity in origin. No doubt it has been favoured by clergymen owing to its advantage in intoning the psalms and prayers in the church service. Nevertheless it is a marked peculiarity, and owing to the dislike felt for it by Americans, Canadians, and the vast majority of Englishmen, must be as disadvantageous to its possessors as any other marked accent. Dean Inge roused considerable hostile criticism in his tour of America owing to his marked use of this way of speaking ; and in this way lost a good deal of the respect which his knowledge, wide outlook, and clear thinking should have commanded. The same has been true of other lecturers who have visited the United States and Canada. On the other hand, the clear and unaffected English of H.M. the King has been generally admired. Any accent may be an impediment and source of distress to its possessor. In my own case I have often noticed that my own remarks were not so well received as they might have been owing to my Craven accent. In my childhood days I ran wild with the farm children, and thus obtained a knowledge of the dialect which I have now unfortunately completely forgotten ; but the accent will remain until the end, although at times I have tried to correct it. The use of the wireless and gramophone records should do a good work in making a standard English speech more widely known throughout the world ; in this way preventing to some extent the tendency of English to split up into several languages in the way Latin did after the fall of the Roman Empire. If it is to be a language in general use throughout the world



it is important that the different peoples using it shall be able to understand it without the irritation felt by most people on hearing it as they think mispronounced. Dialects and local peculiarities of speech had better be given up as far as is possible, although many will regret them.

The boy, or young man, who strives to pass the various examinations which he must take in his progress to the portals of his future profession is usually forced to sacrifice his amusements and natural inclinations and to become a slave to study during some of the best years of his life. At least that is the memory that I have retained from my own younger days. I can still recollect that I dropped my library ticket down a grid, feeling that I was reading too many novels, and that if I were to succeed, there was nothing for it but to concentrate. The novels of Henty may not have been of great literary value, but from them I did derive a liking for history which has continued to the present day, and thus led to my better education, as well as adding to my pleasure and leading to my idle reading often consisting of books that otherwise would have been as boring as they are to many. Unless you have a lively interest in your subject, any study becomes a drudgery that few can face.

To pass as a medical student you have to sacrifice many pleasures: theatres, dances, and games have to be sacrificed resolutely. There are men with phenomenal memories who can study difficult subjects with so much ease that they can afford to relax, but not the average youth spurred on by ambition, and scourged by the thousand fears of failure. To some the sacrifice may prove a pleasure, and to many it becomes endurable by practice; to the average man it is a prolonged misery which must be much worse than any old-fashioned gaol treadmill could possibly be. Mere physical toil, monotonous though it may be, is a



pleasure to many ordinary men compared with the real hard work involved in prolonged mental concentration, if you have not become accustomed to it through years of practice.

All knowledge, or any knowledge, may prove to be useful; and our conception of a god is most easily expressed by saying that he would know all things. The more we know, then, the more nearly we approach to our idea of the superman. No knowledge can be essentially evil: to know the good we have also to know its opposite. The practice and continued dwelling on some forms of knowledge may have evil effects, but that is a different subject; and even then it may be urged that the mere indulgence in such studies shows an unhealthy mind, and that those who indulge in it are already doomed to degenerative changes by inheritance or disease. The only knowledge that can always be justly condemned is such so-called knowledge as is not based upon sound foundations of truth and fact.

Knowledge differs in its value: many facts are more important to us than others; and as the capacity of the human brain is limited, and the life of man is short, we have to consider carefully in early life what classes of knowledge we should choose as being the most suitable for assisting us in our future career.

Before we reach an age when we can begin to visualize our future we should strive to obtain a smattering of all the foundations of knowledge. We should attempt to provide ourselves with a working knowledge of the tools, such as languages, that are essential for our future studies. An attempt should also have been made to educate the body as well as the mind. Man is distinguished by the greater perfection of his hand and fingers from the lower animals. To concentrate on the brain to the neglect of the hands is foolish—but then many things connected with the training of



the young may be thought to be just that. The brain of man has largely developed in equal steps with his increased manual dexterity, and because of it. This dependence of the development of the brain on the use of the hand should be imitated in training the brain of the young. It is true that the Chinese literary classes have from time immemorial been in the habit of allowing their finger nails to grow to repulsive lengths as a proof that they were above any menial manual occupation ; so, also, have our own classical scholars looked down upon the man who was more skilled with his fingers than with his pen. It will, perhaps, be always like this, as man is apt to be too thoughtful of his own importance, and a tendency to childishness is one of his most marked attributes.

When possible, then, there should be a great advantage in training the young to the use of their fingers. The tying of knots and stitching are very important in modern surgery, and no man intending to take up this skilled art should be without some amount of early training of this sort. Carpentry is one of the most useful methods of teaching the use of tools ; and by the use of these the perfecting of the most useful tool of all—the hand—may be accomplished. Whilst training the hands and fingers we are also training the brain and the eye to recognize the useful and beautiful.

Men are said to be well educated when they have gained by much study a knowledge of Greek and Latin ; for this to be really true we should have to put back the clock to the late Middle Ages. Mentally, some of our best minds are still dwelling in this glorious and romantic past ; perhaps they may be beyond help, but we might try to give their children a wider viewpoint from which to start on their specialist studies.

When possible the study of the properties and methods of working metals might be introduced into the school curriculum. A little soldering might be



taught, and so on, if you had more time ; this could be obtained, as I have said, by reforming your spelling, weights, and measures, and jettisoning a lot of the language teaching in the case of scholars or students who did not desire to take up these as specialist studies.

The extent of scientific studies is now so vast that no single individual can have anything like an exhaustive knowledge except in some quite limited field ; so here we come to the necessity for specialization and its unavoidable dwarfing effect on the intellect. A man who is always looking through the high power of a microscope sometimes misses something that he might observe through the lower power taking a larger field into observation at the one view. He is apt to be lacking in breadth of vision. We might say that the specialist is likely to see his own particular interest in every view. Fortunately, as likes and dislikes are so various amongst young people, there is not much likelihood of too many following the same narrow calling, and there will always be some who will take up the most unlikely ones. The present system of state-aided education, higher school education, and scholarships does, however, tend to cause too many to devote themselves to classical and literary subjects that can only result in the overcrowding of the professions.

The ancient Persians, we are told, were accustomed to teach their young men to shoot straight, to ride, and to speak the truth ; surely those amongst them who excelled in these accomplishments, although not perhaps well educated according to a modern standard, yet must have grasped the first essentials which go towards a gentleman's education ; and, of necessity, much more would come to them in their daily intercourse with the rulers of the great empire which their fathers had built up. Our fathers had much the same idea, and I have read somewhere that it was not unusual for a young candidate for the office of midshipman to



be asked by the chairman of the examining board which end of a cigar should be lit, or some such trivial question. To-day there is so much that it is essential that everybody should know that no time can be wasted on unnecessary knowledge, but we should remember the necessity of building on a broad, rather than on a narrow, foundation.

The building of the Tower of Babel has been a source of grief to generations of schoolboys, and has been a stumbling-block in the attainment of more useful knowledge than languages by the hosts of our predecessors, and I am afraid will continue to be so for long into the future. Our language, though not founded on Latin, as are the French, Spanish, and Italian languages, is yet so full of roots taken from these, or directly from the Latin, that it appears still to be necessary to teach Latin in order that our boys may understand their own language. So, also, when we come to science, we feel that Greek is such a valuable and necessary foundation stone for the understanding of so many words, that it is difficult for a self-respecting scientist not to regret his poor acquaintance with this language. But there you are—you cannot afford to learn everything that is worth knowing. We are up against the laws of economics that have of late taken up a more important position in public attention than in the days of my youth; truly the average man who has not had the opportunity of obtaining a first-rate business education may be taken at a serious disadvantage in the struggle for existence. I have heard of medical men who have failed to make good owing to an indulgence in the vice of charity; at times I have suffered from a weakness for this form of self-indulgence myself; and for a poor struggling man with dependants relying on his money-making capacity it is as much a vice as is an inordinate appetite for alcohol. That charity commences at home is one of



the first lessons that the boy has to learn when he leaves school. That it should be forced upon the rebellious is apt to be more harmful than if it be taught in a poverty-stricken home. From which I conclude that the youth in good circumstances would be greatly benefited if his teachers should from the first teach that the laws of economy come before most other things in life. There is no knowledge that is more vital to the happiness of the young individual and his future family than how to cut his coat to his cloth.

Many people appear to be under the impression that any brain may with sufficient industry soak up an unlimited store of knowledge. Some well-endowed individuals do appear to be able to take up an enormous amount of dry knowledge without apparent exhaustion or deterioration of the brightness of their wit ; but even in these cases, and, at any rate, in most people who have endured this cramming process, some tendency to forgetfulness or lapses of memory may be observed. As the library has its shelves more numerous and the more packed with books, so it comes to be the more difficult to lay your hands upon any required volume.

Our youth are in a unique position if they only care to take advantage of it. They have for a mother tongue the only language that a man who decides to study science, or any specialized subject, can hardly do without ; and if you decide to spare your child the intolerable burden of studying languages, you alone amongst the nations of the whole world are in a position to do so without leaving him unable to gain access to the vital knowledge necessary for his future career. Thus, if you like, you are more able to give to your children an earlier and more advanced knowledge of scientific subjects, without unnecessary encumbrance, than are the parents of any other children in the world.



The study of languages by those who desire them and who wish to specialize in them, will, no doubt, be taken up by a certain proportion of our youth. Anglo-Saxon should be studied in a carefully thought out language course ; Gaelic and Welsh by those who desire ; and yet the mass of students with no liking or need for languages would be able to obtain a start over the children of all other nationalities.

Mathematics are of almost universal use, and cannot be done without by anyone altogether. In their study the brain is exercised in a way that is possible in no other study. For calling forth and sharpening the intellectual powers they are unrivalled. In language and science mere memory of hard facts too often plays a predominant part, and although a little of this is undoubtedly good for the brain, too much may prove injurious in the long run to many types of mentality.

In the same class as mathematics may be considered such games as chess and contract bridge as means of sharpening the intelligence by exercising the qualities of alertness, judgement, and tactical foresight ; by such training we increase the general usefulness of our mental faculties—uses which are so important in war and business, politics, and daily life. Many of the usual studies are of little use in this respect.

How far science should be taught to the young is still a matter of dispute ; yet, as I have endeavoured to show, the man who has no knowledge of these subjects is likely to be at sea in all his ordinary judgements of human affairs. In these days surely everyone should have more than a vague idea of the laws that govern the universe ; as it is, people's minds are dominated by sentimental religious ideas that are all right in their proper place, but are miles from the rough realities of the world of fact ; also other sentimental theories derived from the literature of Dickens, and thousands of other English novelists that are the pride



of our country, and the solace of our leisure hours ; but, from the point of view of improving the race of mankind by breeding, an actual danger.

What shall we say, in these days, of a man who has no knowledge of the laws of chemistry, mechanics, heat, light, electricity, and biology ? We may feel sorrow for his ignorance, but is he not an actual danger in a community which is governed by the counting of heads, and much more so when, as is often the case, he is a leader and teacher, perhaps a clergyman, a politician, or even a trade union official ? These men, at any rate, should be in such a position that they might if they pleased realize that the world was not built on the lines of the sentimental socialist, or of Karl Marx.

The man whose sole title to the esteem of his fellows as a well-educated man consists of his rather extensive knowledge of Latin, Greek, and French, is impossibly behind the times from a practical point of view. Such knowledge could never have been very impressive to the man of business and affairs ; it was only important as the education of a ruling class when the sum of human knowledge was very small ; and that mostly derived from the writings of men who lived before the deluge of the barbarians had overthrown the civilizations of Greece and Rome. What is to be said now of the sons of the proletariat who at great expense, from scholarships and public funds, are given such a scurvy modicum of useless knowledge ? The best of the brains of the children of the poorer classes are picked out, year by year, and induced to spoil their early brightness in toiling long into the night to obtain a knowledge of the classics and other subjects ; that, when obtained, can only give them a livelihood in the black-coated legions of poverty-stricken clerks.

With every sympathy for the hard-working son of poverty-stricken parents, working as few slaves have ever worked to obtain a scholarship, it must be said



that in his very success he is probably doing harm to the future of the race. He is taking the place of the sons of men who in obtaining a good position in life have demonstrated their right to continue their race in equally good conditions. By the very self-sacrifice that drives him to succeed he is intensifying the harshness of the educational struggle for survival. A battle of wits and dull mental grinding that may not always improve the sharpness and ability of its victims, but may often leave them listless, unenterprising, forgetful, and pedantic. A few will inevitably do well, and go from success to success ; but for the one that shall reap there will be dozens who shall weep.

That certain occupations should be preserved for the children of the well-to-do is dead against the spirit of fairness and of an equal chance for all ; yet from my point of view it is natural, and, when considered in a cold-blooded manner, best for the future welfare and mental improvement of the race : it is essential that the children of the successful should be given every chance to make good. If a man by his industry and intelligence and by the efforts of his family reaches to a certain level in the fluctuating ranks of the people, it is probably for the good of society that his children should have a better start than he had himself. By doing this we facilitate the efforts of nature to bring the better endowed to the top. Let the cream rise and the worthless sink, has been the harsh rule of nature from immemorial ages ; and to this must be added the other natural, and unnatural, rule, that the sins of the fathers shall be visited on the children. By clearly visualizing these facts and driving them into the consciousness of the people, we shall gradually gain a position from which we may commence to improve the future brain and stamina of the race. That it may take hundreds or thousands of years is immaterial



to my argument ; the degeneration of our race may take much less ; and, at any rate, it is probable that this world has yet some millions of years of history before it. In some far distant future, when man has evolved a little more, I can visualize the different races split up into sections and carefully interbred so as to produce sections of people with different varieties of brain power ; some, bred for their athletic powers ; some their fighting virtues, as amongst the white ants ; and other sections for their manual skill : truly a fantastic vision ! Diversity is the aim of nature, and probably man will agree to assist, rather than to thwart, this tendency. You may do much by working along the lines of least resistance ; little by going counter to them. The idea of breeding men as dogs are bred may appear to be repulsive to our sentimental people, but it is the only way of ultimately improving the mental capacity of mankind ; nay, it is vitally necessary in order to prevent degeneration and decay.

The value of games is thought by many to be over-estimated in our public schools ; but when we consider what continued mental drudgery means to the average boy, and what a relief to this work his games may be ; how it may act as a necessary tonic to his over-strung nervous system ; and how valuable it often is in providing a training in self-control and endurance ; in teaching the young to play the game of life in a give-and-take spirit ; to obey the decisions of the umpire without petulance ; to be unselfish in passing the ball to another player who may be better placed for scoring for his side : it is not too much to say that in the school games may lie more valuable lessons for the future citizen than any that may be taught in the class-room. In the playing of these strenuous games he learns the necessity in life of taking defeat with a smile and victory without excessive swelled headedness ; the necessity to strain every nerve for victory ;



to show endurance and to go on when every nerve cries out for rest ; to show the pluck that is necessary for going on when outclassed by another ; here, indeed, is no little training for the strife of real life, whether civil or military.

Our ancestors probably saw more plainly than we the necessity for this early training in pluck and endurance. In those days it was of greater value than it is, perhaps, in these more effeminate days ; but do not be deceived, it will always and to all men be of inestimable advantage to be able to endure and to bear pain without too much repining at the inevitable.

In the old days a man was liable at any moment to have to bear the surgeon's knife without an anæsthetic ; to have a tooth out without gas ; to have severe dislocations and fractures reduced with very little hope of relief. But even nowadays he is not altogether free from bearing a good deal of pain and discomfort, and his medical attendant would be a good deal inconvenienced and surprised if he asked for an anæsthetic for every painful dressing and manipulation. The fact is that even the relief of pain has to be paid for at a moderately high price. It is said that the introduction of chloroform and its use in confinements has cost many thousands of women their lives ; this must be true if you take the lives lost through unnecessary interference into account ; as long as any manipulation was of necessity a very painful affair, you can be sure that only what was really unavoidable was done. Against this mortality bill has to be placed the saving in pain and suffering, as well as a certain number of lives that would be saved by an earlier interference. There is no need to be sorry for the introduction of anæsthetics. Still, sooner or later, every man has to bear pain and suffering, and finally to die ; he who can bear pain without too much mental distress is happily situated ; and it is a gift that is



in itself worth some little trouble and suffering to obtain whilst still young. In all probability he who is able to bear pain patiently and without any outcry is less injured by the pain, and actually suffers less ; in addition, learning to bear pain patiently is a powerful means of hardening the mind and so rendering it less liable to nervous storms, hysteria, and nervous depression. A good many of these diseases have their origin in a weakness of the mind that leads the individual to dwell on small misfortunes ; he magnifies his importance in the scheme of the universe, and considers himself ill-used.

A hundred years ago the boys in most schools were exposed to every species of hardship ; the teaching of the ability to bear pain might have been thought to be the chief object of these schools. I am not altogether sure that they were not on the whole more or less right in doing this. That they overdid it is an indisputable fact, as anyone who has read the autobiography of the late Canon Wilson, of Clifton, must admit. His experiences at King William's College, in the Isle of Man, are unbelievable at the present day. Still a good idea is often overdone, but that is no justification for believing that in moderation such might not be beneficial. It is my opinion that children who have never been beaten in their youth are apt to be inferior in hardness and tenacity to those that have ; also whilst still young they are likely to be a cause of grief and unpleasantness to their parents and to anyone who is brought into contact with them. How far the pendulum has swung in the opposite direction is shown by the numerous reports of violent attacks by mothers of children in the municipal schools on teachers who have ventured mildly to apply physical correction to their offspring. In these days of small families and spoilt children this is no doubt what we must expect. It is also due to the



greater influence of the mother, over that of the father, in the bringing up of her children, as compared with the more masculine conceptions of previous generations. The result is that school discipline has to be carried on in these schools without recourse to manual correction. Even though the school discipline may be good, does the pupil not miss what could do him no harm, and might prevent in future years much more serious suffering and mental affliction? Does he not miss what after all may be the more valuable part of his early training? A child is naturally a savage who has not yet attained to civilization, and he is by long inheritance much more disposed to pay attention to physical correction than he is to any more civilized punishment. Impositions, losing a half-day's holiday, and so on, were considered to be much more annoying than any mild physical correction by myself and fellow boys; what is more, I am sure that they were much more injurious to our health. The loss of a holiday is a serious affair to an overworked schoolboy.

The trouble with physical punishment is that in the heat of the moment it is liable to be overdone, as in the traveller's tale of a South Sea Islander, who is said to have dashed out the brains of his favourite son for the trivial fault of upsetting a basket of eggs. Truly, self-restraint in moments of anger is worthy of ranking as one of the lessons that every man should strive to teach himself; and, perhaps, that lesson may be taught to the best advantage in the public schools where the prefects have the power to apply physical correction for minor faults of conduct.

We are always, throughout life, learning, and it has been said that our true education only commences when we leave school. This may be an over-statement of a part truth, but at any rate it should not have the same amount of truth in it in the future as it may have at the present time.



We learn from newspapers, from our friends, and from such aids to education as the cinema and wireless. The cinema is unjustly attacked by many of our leading men as an inducement to immorality, and as teaching the young how to become burglars successfully. This may be so in the case of the very susceptible and ill-balanced ; but every good has its unavoidable opposite of evil, and the cinema, even at its worst, does impart a knowledge of foreign countries and their customs, and all sorts of odd bits of knowledge that to learn, you would otherwise require an extensive tour of the world. If every boy attended the cinema once a week, as many do, I am sure that the knowledge so gained would heavily outweigh any evil that he might absorb. Personally, I doubt if any knowledge is likely to be really harmful to the healthy mind, even when very young. Much of so-called knowledge is wrong in fact and theory—that is another matter. To know the right we have of necessity to know something about the wrong, and if in these days we start a little early to delve into the unsavoury, at the worst it may help on our maturity.

All men are slaves : some to their appetites ; more, because of their necessity to support a family on an insufficient wage ; many, as Rockefeller is said to be, because of their poor stomachs. Individual freedom is an heroic dream of our Nordic ancestors who roamed freely over vast tracts of open steppe, or hunted individually in the northern forests of Europe for their food. The instant they began to settle down in village communities a good deal of their individual freedom had to go by the board. Truly they would not be so frequently exposed to death by famine or accident, but such advantages would be dearly purchased by such a people. Any advance towards a more tightly organized society will prove even still more expensive to our race. After all, is it not more advantageous to



a race that a large portion of the community should live on the verge of starvation than for every one to lose his opportunities for self-expression, his self-reliance, and his freedom from irksome control? So would judge many individualists, and who can deny the advantage of the free development of the type of individual thus favoured? Is it not better, in the long run, that a few should be made comparatively free by their wealth and position, rather than that all should be reduced to one dead level of comparative poverty? A rigid social state where all would be on a dead level of equality is against the intentions of nature, and is certain to be harmful to the better development of the race. All men are born unequal in brain and muscle: the best should breed better, and the worst should be exterminated, as and when possible. That is the picture of life as I see it; and that is the picture that I imagine our more brainy successors will ultimately come to accept as their ideal.

We all have to submit, more or less constantly, to restrictions on our personal inclinations since we have become social animals; and although we are not yet so advanced in this direction as are the ants and bees, still we have advanced a long way in this direction, and it is, therefore, necessary that at an early period of life we should teach our young to respect the laws of the community. This should be done systematically in our schools and churches. In Victorian times an almost universal acceptance of international rules of behaviour in war and peace seemed to be gaining recognition. The use of poison gas, flame-producers, political assassination, and so on, appeared to be unthinkable by self-respecting nations; but what, now, are we to think of the condonation of such crimes in so many European countries?

Politically we were advancing steadily in the path of individual freedom; it looked as if the whole world



was gradually coming to believe in the system of government which we had gradually built up through many generations of parliamentary government. Now we find that the tendency is towards the tyrannies of groups or parties, with the total or almost total suppression of any party that might possibly work towards a different form of government. Lately we have seen in Germany that there may be a total taking away from whole sections of the people, as in the case of the Jews, of the primary rights of being able to compete freely with the more numerous sections of the people in making a living. The extent of the handicap under which the Jews of Germany will have to work in the future is yet to be seen. This sort of thing would have been considered to be impossible except in some distant and half-civilized country before the war. It is a denial to a large section of German citizens of the primary rights of equal justice before the law. To my mind it is regrettable, as if in the future we succeed in breeding people with greater brain power than the vast majority, the population will of necessity become split up into sections with varying capacities, and largely kept separate from each other, breeding only in their own ranks, except when crossing for some reason or other is required. If the European peoples are not able to tolerate a section of people such as the Jews, who do just these things, it looks as if they would have some difficulty in digesting such a plan as this. Revolutionary movements are usually based on jealousy as the moving force whatever the theory of the leaders. However, the point I wish to stress is the tremendous denial of all the old liberal ideas that is at present prevalent throughout Europe. What has really damaged the English idea of representative government is universal suffrage and the rise of the socialist and communist ideas. These theories of government are so revolutionary that orderly government cannot be



maintained when a fight to a finish is proceeding between these ideas and that of individual liberty. If the poorer parts of the population are to plunder the property of the richer classes ; if the dictatorship of the proletariat is to come into being ; then your old ideas of orderly government must of necessity be swept away : in other words, you are faced with a revolt of the slave classes, as in the time of Spartacus. In the face of dangers such as this, the vote of the poorer classes will probably become too dangerous to be tolerated, and your democratic ideas will go by the board as being unworkable. When some people possess more money and more brains than others they will naturally succeed in one way or another in keeping their pre-eminent power in the state. If they fail, their place will be taken by a new class of sharp-brained people and you will be in much the same place that you were in before. In either case your votes for every man and woman will be honoured more in the breach than in the observance.

In these days of half-baked socialistic and communistic ideas a severe form of repression is required, otherwise your institutions will go down into the oblivion of forgotten things. Our individual liberties are at stake, and revolution will have to be stamped out in much the same way in which, whenever possible, the surgeon stamps out the similar disturbance in our own bodies of a cancerous growth. As I see it, in the future the tendency will be towards some form of specialist government : the ordinary body cell, worker bees, or less brainy individuals, having very little say in the control of the state. The man in the street will be less and less trusted with any say in the intricate business of scientific government.

It has been said that anyone having the power to teach the young can control the future political opinion of the next generation. It has been said with some



evidence of its truth that Ireland broke away from this country owing to the pronounced Sinn Fein sympathies of the school teachers in the Catholic schools. As the government of Great Britain had done so much to make the position of these teachers secure and comparatively well paid, it looks as if they had possessed a very ungrateful spirit. However, we should be warned by this misfortune, and in the future take every precaution that subversive doctrines are not taught in any school which receives public money, or in any school at all.

In my own schooldays the political opinions of my masters, who were mainly liberal, left me very cold indeed ; but the opinions of my fellows were probably more plastic to the potter's hand. Be that as it may, it looks very much as if in the future the political opinions of school teachers may have to be censored rather severely by any government which seeks to survive ; as, indeed, is the case already in Russia, Italy, and Spain. In Germany, presumably, very few Jewish, communist, socialist, or even pacifist teachers will in the future be tolerated.

There is much to regret in all this, and, unfortunately, it is only too probable that we shall be forced by circumstances to follow more or less closely in the footsteps of these countries. Time will show.

As things are at present, a knowledge of at least one or two of the modern languages is necessary in the education of the better classes. Until now French is the only one that has been at all taken seriously. Now French is not a very difficult language to learn to read, but it is a very difficult tongue to learn to speak : I should say impossible without a quite long residence in that country. If you listen to foreign speakers on the wireless you will be struck with the difficulty in following the words spoken by the French as compared with the greater ease of following the



words of German, Italian, or Spanish. It appears to me that it would be of great advantage to give German the preference, if only one is to be taught. With a few reforms which I have mentioned above it should not be impossible to teach both French and German ; and, where there is a possibility of a mercantile career being in prospect, Spanish should be added to these. German, Italian, and Spanish could be so far mastered that they could be understood over the wireless, with less difficulty than the pupil would have in learning the one language of French to the same degree.

Whatever you do decide to teach the scholar of the future, at least attempt to teach consideration and gentleness in dealing with your fellows ; honest dealing between man and man ; love of the truth for its own sake ; even justice to all ; hatred of murder for political ends ; love of orderly evolution as compared with revolution, even if it is slow—why such haste?—many things will come in time, even if not all things. States and civilizations are like plants—to reach a perfect form of development they must be allowed to grow without disturbance or shocks ; they may be trained with care, and they may be pruned, if not too drastically. If handled too roughly they may succeed in growing up, but they will show in their mature state the signs of the injuries that they have sustained in their youth. The teaching of biology and the pointing out of how social systems such as those of the bees and ants have developed might do much to restrain the self-confident enthusiasm of youth.



## CHAPTER XI

### MISTAKEN THINKING

A FEW years ago there was an almost universal belief in Universal Suffrage ; this appears to have undergone some weakening in the strength of its appeal, with us, as well as on the Continent of Europe. Still this system of counting heads looks as if it might long prevail amongst freedom-loving peoples ; imperfect as it is, it has several great advantages. As long as it is not pushed to extremes it is probably the only method of government which is not liable to be the cause of constant civil disturbances and revolts, open or smouldering underground. Its defects are mostly due to the way in which ignorant masses of men can be influenced to the harm of the state by eloquent exponents of mistaken theories ; also to the fact that the vast mass of the population have, and will long continue to have, a very feeble idea of the correct methods of government, and of what is good for the state as a whole. The majority must, from the necessity of things, always live on the edge of poverty, and to such the temptation to vote for their own particular interest, and to let the rest go hang, must be as a general rule overwhelming. How ignorant people really are of political theory, laws of economics, and of the common or garden facts of human biology—even if they have ever heard of them—must be evident to any observant person. The brain of all—even of the best—is a very imperfect instrument. Add to this the existence of large numbers of actually insane and defective, the existence in the population of very large and increasingly important classes of elderly men and women whose brains are shrinking



through age or disease, and then consider the three million or more people who suffer from hysteria, neurasthenia, and other functional disorders of the intellect, and you begin to wonder how many there actually are who are able to think out correctly the right and wrong of the cross they so easily make on their voting papers.

It is perhaps a little bit presumptuous to suggest that other people than yourself are liable to think along mistaken lines. But if anyone takes the trouble to listen to sermons and lectures I imagine he must often come to the conclusion that a large part of what he hears is founded on a mistaken basis of fact and theory. Can anything be done to clear the way for a more exact view of the facts of life, and so help to a better understanding of the difficulties that lie in the way of the enthusiastic reformer and idealist? Very little I am afraid; it may be that the preceding papers may help in some small way; that, it is to be hoped, is not too presumptuous. Would that some magician would turn aside the curtain and show us the beliefs and actions of our successors; but if it is difficult to understand rightly the past, how very much more difficult must it be to understand even approximately the future.

We have seen lately a few prophecies of woe depicting a world ruined by poison gas dropped from enormous fleets of aeroplanes. Not very convincing from any point of view. Cities and nations will always be liable to surrender before enduring such a degree of decimation. Even if every city in Great Britain were destroyed, it would not mean the destruction of civilization. It might even mean its purification in a return to the country life of our ancestors: not that I am such a wholehearted hater of the city as to desire that; but I do hate exaggerated statements of all kinds, except, perhaps, when stated by myself—which is only human.



How is it that so many men shriek about the wickedness of capitalism, taking the doctrines of Karl Marx as their Bible? Is it not because their basic idea of the meaning of life on this planet is hopelessly idealistic and mistaken? If all men were equal in brains, in opportunities, in possessions, in physique, and in desires—Yes; what then? We should not be on this globe—should we?

The fact is that the brains of the vast majority of men and women are not very efficient instruments except in those narrow fields of activity where they have had constant exercise and experience.

In this life the one really unforgivable sin is that of ignorance. Nature forgives a good many sins against her, but there is no answer to the sin, for instance, of eating a poisonous fruit; it is of no avail to plead ignorance. The laws of man may pardon a first offender on the score of ignorance; in the sight of nature he must take his full responsibility. The offender may escape, but not from any show of mercy on the part of the laws of the universe. If our remote ancestors failed to note the signs of danger from their quick eyesight, acute sense of smell, sharpness of hearing, and general knowledge of the habits of wild beasts, but blundered into the reach of a cave tiger—they perished. In perishing they left the future open to their brethren who were quicker of apprehension. Ignorance, and with ignorance weakness of any sort, must always yield to knowledge and strength. The pen is mightier than the sword only in the sense that, in effect, it is able to range many swords on the side of the right.

The ignorant may believe in many things which are foolish, such as witchcraft; believing in which they may commit many judicial crimes. There is no end to the evils of ignorance; if we knew all things we should be as the gods—almost all-powerful.



The next great foe to correct thinking is the belief which has been deeply impressed on our minds in infancy, so that it has become part of our subconscious nervous system. Thus when danger appears to threaten it, or even when we fear that it is liable to criticism, we experience a sensation of fear and pain, and all our reflex defensive mechanism is called into action. When a politician hears his party principles attacked he almost by reflex action starts to defend them. Political speeches are usually spoken as if to a barrister's brief, and if analysed are usually found to rest on certain fundamental assumptions which have become so much a part of the speaker's brain that he assumes that all men will accept them as readily as he himself. Such assumptions may be that: All men should be equal, and that the poor man has a superior right to justice to the rich or successful one; that small states should be protected from the larger; that free trade is for the benefit of all under all circumstances; that progress means an ever-widening franchise, and an increase of the English Parliamentary system throughout the world; that nations as individuals should turn the cheek to the smiter; that the surest way to abolish war is to disarm, and for the lamb to lie down with the wolf. A very little quiet thinking will throw a good deal of doubt on some of these amiable stepping-off stones. As sentiments, they may be said to speak for the soundness of the heart of the utterer rather than for the soundness of his judgment and the extent of his historical and scientific knowledge of the nature of mankind. It is dangerous to ignore the long progressive evolution of man into diverse races, and the continuance at the present time of those natural laws of evolution which tend towards differentiation rather than unification, and the impossibility of altering the character of the different races even by such powerful weapons as



education, propaganda, and appeals to an idea of universal benevolence.

Many of the ideas that are thus interwoven in our subconsciousness so that they have actually become a part of our brain, and are so beyond our powers of self-criticism and correction, are chiefly derived from our religious, moral, and patriotic teaching of early childhood, and period of growth, when the brain seizes with avidity on anything that attracts its interest.

Somewhat analogous opinions to these fixed ideas of the sane are those of the actually insane. These are often only different from those of the sane in their more outrageous and unreasonable character. If a man asserts that his wife is slowly poisoning him, we may doubt his statement, but will certainly have some trouble in making quite sure that it is merely a delusion ; but if he asserts that his next-door neighbour is dragging out his liver by means of powerful magnets, we feel no such difficulty in coming to a correct conclusion. We do not in such a case think that it is necessary to go to the trouble of examining the neighbour's house on the bare possibility of discovering any such instruments of torture. If Einstein, or one of his followers, assert that the universe is a finite one, and that it is expanding, we may feel a certain amount of doubt and discomfort, but not being equal to the understanding of the mathematical reasoning involved, it is wiser to remain quiet and to await developments. When someone asserts that without the consciousness of man the universe would not exist, and that it is only a figment of man's imagination, we may conclude that he is not a person who can reach a sound conclusion, or else, which is worse, that he is quibbling.

When we hear spiritualists asserting that they have received communications from their lost relatives we naturally feel a good deal of disbelief without actually



being in a position to prove any falsity to the comprehension of every person. Why we feel so confidently that spiritualism is a fake and delusion is not easily explained; probably we reason something like this—human beings are always looking out for something to assist their hope of immortality; therefore it is natural for them to believe easily in the statements of any charlatan who has the assurance to bluff enough and the skill to put over a little sleight of hand conjuring. It is against all our experience of human life to imagine that it is surrounded by a world of spirits, or that the huge mass of individual cells which forms a brain can go on existing in some sort of way after death. These individual cells perish one by one during our life and we do not expect them to leave any remnant behind to haunt us or our friends. The pus cells which escape from a septic wound are the dead and dying soldiers of our body; is it possible that each individual one leaves a ghost behind it? In fact the whole idea appears unbelievable and bizarre, and we feel that we can safely wait some personal experience of the truth of spiritualism before taking any notice of its claims. We have to judge of many statements in just such a ready manner as this, as life is too short to make personal investigations into the truth of every weird statement of fact and theory. We put every assertion to the quick test of probability, and ask whether it agrees with the vast mass of ascertained facts; if not, or even if there is any doubt, we put it aside to await later confirmation. A true statement usually bears the imprint of truth on its face, and it is not difficult to find supporting facts to give it credibility.

Even the best educated men, such as we find in our own profession, are subject to irrational beliefs; the addiction of physicists to spiritualism is notorious. How many heterodox theories and practices of medicine have we not seen! It is not so very remote in time



since two well-respected Liverpool physicians, on meeting unexpectedly at the corner of two streets, thought it necessary to mark their mutual disapproval by blacking each other's eyes, and then to proceed on their way. This was because one of them had recently become a homœopathic practitioner to the anguish of his friends. No doubt it was a lucrative proceeding at that time, when it had become a fashionable craze and Lord Beaconsfield was being attended by a practitioner of this irrational practice of medicine. At any rate it must appear somewhat like that to any one with any knowledge of chemistry, not to say knowledge of medicine. As originally stated, I believe it was founded on the assumptions that like cures like, and that a small dose is likely to be as efficient as a larger one. No doubt there is a modicum of truth in these statements, but surely a man's intelligence is sufficient to show him that this is very partial, and that it is absurd to found a new and improved theory of medicine on such flimsy grounds. In medicine for every action there must be a correct dose, and if we only knew the exact dose we should give neither more nor less than the correct one: to neutralize an acid you require so much and no more of an alkali. The actions of enzymes and catalysts are interesting but do not apply in the ordinary run of chemical action.

Lately we have had an importation of a variety of bone-setting from America, which, judging from the letters in *The Times*, is again attracting the credulous members of society. As the spine is built up of solid pieces of bone separated by elastic cartilaginous tissue, bound solidly to the bone, it is not easy to see how much good can be done by violent manipulation without injury.

These practitioners claim so much that the reasonable man will probably conclude that such successes as they may have are largely due to faith healing. We



general practitioners who have blunted our scalpels in vain attempts to make a good dissection of the intricate mass of tendons that bind the spines together are not likely to have sufficient faith in any impression that we may be able to make on this elastic column. Those of their patients who have afterwards come to me appear to have been mainly suffering from gout ; some from a rheumatoid arthritic condition. In the first class large doses of salicylates have done more good than their former treatment. It appears to me that most specialists and people who write about rheumatism have forgotten that there is such a thing as gout, or uric acid ; undoubtedly our Georgian predecessors would have called a good many manifestations of disease gout ; whereas we think of focal infections, traumatic strain, and so on. Massage and manipulation do a good deal in improving the flexibility of the spine, but there is nothing miraculous about that. Yet recently we noticed that generals in the army and other influential people were writing letters to *The Times* advocating the legalization of this method of manipulative surgery on an equal footing with the orthodox. One would imagine that what was good enough for the homœopath should be good enough for the osteopath : that is, to pass the usual examinations before specializing in their own peculiar form of treatment.

The ordinary English bone-setter we have always had with us, although not quite so popular as formerly. The great Owen Thomas, the inventor of the Thomas's splint, and several other forms of treatment, had as a father a successful bone-setter. This man had the good sense to give his son the best medical training he could afford for him. My own father, who attended some of Thomas's demonstrations at his free clinic, heard him say that he was very grateful to his father for giving him a good medical education, and that he was of opinion that unqualified bone-setting



was so dangerous that it should be forbidden by law. Anyone who has a first-hand knowledge of the subject would probably agree with this opinion. Yet many bone-setters obtain quite a respectable knowledge of orthopædic surgery, and no doubt at times do good work. Yet for all that a man who has never dissected the human body should not be allowed to pull it about in the way that these men do, lighting up old tubercular lesions, causing outgrowths of new bone into joints, and generally doing a lot of harm for the few genuine cures that they may effect. It is peculiar that nearly all the patients who have previously been to a bone-setter have been told that they have a small bone out of place. Obviously in most cases this is a very mistaken diagnosis. Some time ago I remember reading in the daily press of a very eminent bone-setter who, on entering the water to bathe, as he afterwards informed the reporters, dislocated his neck. This with great skill he was able successfully to reduce. Most people will remember jarring their neck on stepping down a step, but they would hardly care to call it a dislocation.

Besides osteopaths we have from America the practice of Christian Science, the Abram's box, and some other forms of eccentric medico-religious treatment. I have heard of a religious cult at one time popular which led to some of its disciples starving themselves to death in the cause of health. Whilst on a long sea voyage I was entertained by a gentleman who believed that we lived on the inside of a cylinder, and not on the outside of a globe. I believe this was quite a popular belief at one time in some of the Southern States.

At the present time a too great sentimentality, or, as you may put it, a too great belief in the nobility of man, his semi-sacred character, and his individual perfection, appears to be at the bottom of a good deal



of mistaken thinking. We hate pain of any description too vividly to be perfectly healthy in our general outlook on the world and the works of nature. This leads to an outlook which I can only describe as being essentially neurotic, and this is bound to warp our views in a world of constant conflict, where the strong in will and power to endure—that is to bear pain and adversity with a stiff upper lip—are in every way the more likely to succeed. We all have a certain amount of sentiment of a more or less religious character, and no doubt we should often be the poorer without it. No one is able to free himself from it completely as a certain strain of superstition appears to be largely inherited from our parents and teachers in early life; and, as in most children, there is a natural belief inherited from remote ancestors in fairy tales and magic, it is easy to understand how deeply ingrained the superstitious thread is in our subconscious thoughts. It often colours our whole conception of life, and may be always there in the background even when we may be of an agnostical frame of mind. Although the followers of Karl Marx profess to have thrown aside the Christian religion, and relentlessly persecute its adherents, yet the basis of their political belief is indistinguishable from some of the teaching of Christ, and is due to the same altruistic love of our fellow men and desire to benefit the down-trodden. Christianity as we have received it teaches a moral law that is an extension of the humanitarian ideas of man from early times. No doubt the Egyptian king and reformer, Akhenaton, had centuries before much the same trend of thought. It is from the more austere teaching of Christ that modern Communism has taken its foundation stone; let the followers of Karl Marx deny it if they will. Communism is wrong, as all such ideas are, because the laws of God as shown in the working of natural mechanism must take precedence of rules



laid down for the conduct of life in socialized communities. After all, if there is a God who laid down the rules of progressive development, these laws must come first as expressions of God's will before the moral law. If He made the world, He also laid down the rules of nature that command men and animals to live if they can, and living successfully to continue their species at the expense of the weaker animals and tribes. The first law of nature is the one of self-preservation, as has always been admitted by both the Christians and heathen ; if not openly, at least actually. This involves the subjugation or suppression of the weaker who may be dangerous or inconvenient. This does not mean that the moral law should be set aside—"Render unto Cæsar the things that are Cæsar's, and unto God the things that are God's."

It is true that a very complete system of Communism is natural to some communities such as a bees' nest, and might by dint of a long system of inheritance become equally natural to mankind. The social system of the Peruvian Inca Empire was far advanced in the social scale. What Communists do not appear to realize is that such a system cannot exist without the most elaborate organization, and this must of necessity prove irksome to the vast majority of the people. It is not a system that a believer in the ideal man would willingly support if he knew truly what he was working to introduce. Some years ago I attended a lady in her confinement and delivered her of twins ; after the birth I was informed that the father was a lodger whom the husband had taken into his home out of charity. It appeared that this man was a fellow Communist to the husband, and the latter naturally thought he was doing a good deed to assist him. He had not bargained for the introduction of Communism in wives into his own home. The Communist husband threw his wife into the street,



and the twins afterwards died in a Liverpool workhouse.

That there is a wide gulf between the laws of nature and those altruistic rules of conduct which we have usually considered to be the true expressions of God's will is self-evident, and it is the existence of this difference that makes religious people hate natural science.

Even nowadays most of us have a strong desire when in distress to cry for assistance to some higher power. This feeling is so strong that even the strongest of unbelievers feels a sense of comfort and relief in being able to say his prayers when in difficulties. If he does not pray he is liable to curse ; and this, although not so good, may relieve his feelings. The prayer is the better, and Herrick beautifully expresses this feeling in his Litany :—

When I lie within my bed  
Sick in heart and sick in head  
And with doubts discomfited,  
Sweet Spirit, comfort me.

When the house doth sigh and weep,  
And the world is drowned in sleep,  
Yet mine eyes the watch doth keep,  
Sweet Spirit, comfort me.

When the artless Doctor sees  
No one hope, but of his fees,  
And his skill runs on the lees ;  
Sweet Spirit, comfort me.

When his potion and his pill,  
Has or none, or little skill,  
Meet for nothing but to kill ;  
Sweet Spirit, comfort me.

So much for the outlook, or intellectual view, that we obtain from our scientific studies, but there is much more in religion than that. There is the whole system of our moral relationship one with another, that we have slowly and laboriously learned and taken more or less to heart from our religious teachers which, if we were to throw on the scrap heap, would leave us



poorer indeed, and would tend to throw us back to the pre-Christian age, when every educated man had to make his own religion, or his own superstition, and his own morality. In this case, no doubt, the majority of sane men will still act in a rational manner, and from a feeling of public spirit, as did the noblest of the Romans act to the best of their ability for the good of the state and the well-being of the individual ; yet, inevitably, there will be a weakening of the moral code, and the weak-willed will miss the restraint of their religious teaching. Some shadow of this we have long seen, and probably are destined to see much more of ; this appears to be unavoidable. Yet some of its evil might be averted to a considerable degree if the great national Church should cease from futile heresy hunts, and the teaching of untenable dogmas, and devote more of its attention to the teaching of morality and just dealing between man and man—the foundation of which has been so truly laid in the teaching of Jesus Christ—and come to recognize the fact that the laws of God, laid down for the continued improvement and existence of the race, have not been superseded by the later laws of morality ; that the laws of our moral and social welfare must of necessity exist side by side with the law of tooth and claw, as it has been called, of the universe in which we have been able to construct our advanced form of society. Is this possible ? Most people will laugh at the idea ; yet the English Church has much more adaptability in its construction than any other Church, and has in its history gone through many crises, and if it passed through the Reformation and the Dissolution of the Monasteries with success, surely this is not impossible. Lately it has seen much trouble and change owing to the High Church movement ; and there already exists within the ranks of the Church so many advanced thinkers that very little patience and goodwill is needed to allow the reform



to take its course. If this should prove to be so, our national life may be but little endangered by the gradual adoption of the new ideas that are rapidly becoming essential if a serious deterioration in our people, and the possible collapse of our civilization are to be avoided. All that is required is a continuance of the moderation and tolerance for the foibles of the other man that have on the whole been the outstanding virtues of the English Church alone amongst the great religions.

Anyone who has had the leisure to read and enjoy *Jane Eyre* must have grieved over the puritanical cruelty of some types of fanatical clergy, and must have realized that some of the laws of the State, supported by the Church, require radical alteration, such as the compulsory tying of a sane person to an insane one of the opposite sex. Amongst other reforms that would advance towards the lessening of unnecessary suffering would be the abolition of the laws which so savagely punish anyone who interferes with the pregnancy of an unmarried or married woman. Frequently I have experienced a feeling of shame when compelled by the rules of the profession, natural cowardice, and the commonsense of self-protection, to refuse to interfere in a pregnancy which was unwanted, dangerous, and often undeserved. Here we shall have to prove ourselves to be as humane as the Russian Soviet.

Otherwise, I should say to the clergyman, remain as conservative and as slow to change as is possible. There is no harm in teaching dogmas that are universally felt to be a little out of date if the intention is good. It is not expedient for the mass of people to be too suddenly deluged with reforms for which they are not prepared. Knowledge comes to the mass of people but slowly, and wisdom lingers far behind. No, gradual and very slowly advancing change is indicated; yet men with intellect and knowledge may do great good,



in the pulpit more especially, as that advanced thinker Dean Inge has shown.

Why not? As Shelley puts it—

The cross leads generations on.

The religion of primitive man consisted of a belief in the powers of nature in its different manifestations: the sun that travelled right-handed round the earth, and under the influence of whose warmth the earth blossomed anew each successive spring. Did it not apparently fertilize the earth and cause it to produce an hundred fold? So naturally he represented his God as a disc with rays; later this came to be represented as a simple cross. From this, or some similar train of thought, it came to represent the male organs of generation. As in these early days victims were sacrificed on the cross to the glory of the sun, so in later times it came to be the recognized custom to crucify on the cross the worst class of criminals. Owing to this custom amongst the Romans it became our own sacred symbol. The cross, the symbol of the male, combined with the oval, as the symbol of the female, became amongst the Egyptians the symbol of life—the sacred Ankh. It is still used amongst the paraphernalia of an archbishop as the pallium. It is also used in botany as the symbol of the male when drawn obliquely and as the female sign when inverted—male ♂, female ♀. What is the swastika but a variation.

The French philosopher, Rousseau, who had such an influence in bringing about the French Revolution, believed that man had not risen from a lower stage to a higher, but had deteriorated from a higher to a lower; from an imaginary noble savage he had become a pitiable degenerate slave. It is no doubt a fact that civilization does carry in its train a tendency to degeneration. The brain has increased in efficiency,



not only having an increased store of facts gathered from the written word, but also an increase in its complexity as shown by the increase in depth of its convolutions ; in actual size there has been no increase over the brain of the Cro-Magnon man. On the other hand, the teeth have degenerated and the jaw has become smaller ; and in other respects, no doubt, signs of degeneration could be mentioned. The gains of civilization are too apparent to be doubted and will only be denied by a few disgruntled spirits. The modern researches of archæology have plainly traced the upward progress of mankind from a lower to a higher plane of civilization. Whilst the brain has thus increased in its knowledge of facts and in its power of judgement, it still retains sufficient of its primitive character to make our thoughts, and probably still more our subconscious cerebrations, much the same as those of our savage ancestors. So, of necessity, there still remains in all of us a sneaking liking for superstition and a too easy acceptance of the authority of a dogmatic statement, particularly when seen in print. Thus we often notice that quite well-educated men have a pathetic belief in mascots, charms, and omens. The less said about the uneducated man the better, as you cannot expect him to be superior ; yet, as a matter of fact, many uneducated people pick up a wonderful amount of knowledge from the daily press, cinemas, and novels, and thus are far from being the ignorant people you might expect. Even when men are more than usually well endowed with common-sense, it is quite usual to find that along certain grooves their brain appears to work imperfectly or, shall we say, appears to have a bias. Genius is not exempt from blind spots in the brain ; hence the well-known danger of accepting the *obiter dicta* of even the most eminent men in their own subjects. We are all apt to err, but the error of a man who



has the ear of the public and the press is outstandingly dangerous.

Some types of genius are indeed allied to actual defectiveness in other parts of the brain, as in the case of certain defectives who may have outstanding powers in mental arithmetic and are able to perform wonderful feats with figures, and who are in other respects so defective in mental power that they are unable to look after themselves properly. To think clearly and correctly is one of the greatest of gifts that we can have ; and it should be valued more highly than it often is. Prejudiced as we are from youth upwards with settled convictions, built up from erroneous or doubtful premises, it is impossible for many of us to form a true opinion about the simplest questions of life or politics. Our school education teaches us to read and write, a little history, geography, and mathematics, and then we spent an enormous amount of time in learning languages, and at the end of this what do we, or can we, know about the realities of life ?

For the rest, we should certainly recommend to all youthful persons—to the old we should not presume—that they should regard all their most cherished convictions with a certain amount of humour. Life is so short and cases are so hard that our most cast-iron convictions have to go by the board on occasion. Let our religious convictions, or lack of them, be broad-minded and tolerant. Let self-respect and pride of race and family keep us from descending to mean and low practices. Do unto others as we should like them to do unto us. Remember the duty that primitive nature has laid upon us to guard and protect our family, our village, our tribe, our country, race, and so extend our loyalties to the whole of mankind in an ordered and graduated manner. It does no good to prefer the stranger to our brother—and if we do, nature is apt to exact a strange revenge. Still regard



even your patriotism with humour ; even a foreigner may be right. Possibly a good way of serving your country and race may be to study the methods by which the individuals of that race may be improved by breeding, teaching, or what not ; therefore be careful to bring into the world the best possible ; that can only be done by care in marriage.

How far local patriotism should be encouraged as contrasted with wider calls upon our patriotic instincts is doubtful ; still a lot may be said for the preference always being given to a local person ; surely it is a weakness when, as it often proves to be, a man is no prophet in his own country. A disinclination to allow colonization by an alien people is natural and probably essential for racial progress and purity. Still a little humour and good nature may soothe away many an aching wound and sore.

When young, we are naturally full of enthusiasm, and this is the driving force of all revolutionary movements. It may be of great value to the community when rightly directed, but owing to the ignorance of youth it is often directed into evil channels, and so used by visionaries and ambitious men to further their own mad schemes. As some men retain a touch of youth well on into middle age, so do many men retain their youthful enthusiasm into middle age, and never appear to grow mature in their thinking apparatus ; thus visionary ideas are apt to persist when ordinarily they should have grown aware of their futility. As life passes most of us become tired and cynical, and then judgement should be at its best, although we may lack the driving-force of youth. As Omar Khayyam wrote—

“ Alas ! that Spring should vanish with the Rose ;  
That youth’s sweet-scented manuscript should close ;  
The nightingale that in the branches sang  
Ah whence and whither flown again, who knows ?





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