



EUGENICS AND RACE

by Roger Pearson, M.Sc. (Econ)



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I

EARLY BEGINNINGS

On serious reflection, one cannot but be amazed at the recentness of the discovery by mankind of *Science*. The Greeks and Romans approached thought from a philosophical standpoint, but failed to construct an empirical body of scientific knowledge. Physical science as a recognised discipline came only in the seventeenth century, after the construction of a new code of logic by English and French philosophers of the Renaissance, and a true appreciation of biological and anthropological studies came later than the sciences of physics and chemistry. Thus scarcely one hundred years ago, mankind was still ignorant of the most elementary and basic facts of evolutionary theory, even although farmers in western Europe had for decades engaged in the selective breeding of livestock and the cross-fertilisation of crops, to produce such specimens of cattle, corn and horses as the world had never before seen.

The study of human heredity and the science of Race remained dormant until the latter part of the eighteenth century, when Sir William Jones achieved almost overnight fame by revealing the connection between the languages of modern Europe and those of India, by showing how both had sprung from a common ancestral tongue. Sir William in fact, was expounding the elementary theory of evolutionary development, and he it was who inspired Darwin to apply the same principles to the comparison of biological types, and to astonish the educated world with the declaration that living species are not fixed and unvarying, but are subject to modification and development, becoming specialised to meet the problems of their environment, or else deteriorating and becoming extinct when they fail to meet the challenge of life.

As anthropological science eventually developed, therefore, a new page was turned in the record of humanity and man suddenly found how inspiring was the story of his own history. He realised, then, that a lowly origin is nothing to make us feel shame; rather should we take pride in human achievement and the epic of human progress. How much better that the history of mankind should be what is popularly known as a "success story", rather than that we be obliged to think in terms of fallen angels and retrogression! As Bishop Barnes pointed out, there is nothing immoral or irreligious in accepting the fact of man's lowly origin, and of his slow upward struggle.

This astonishing evolution in human thought was pioneered almost entirely by four great scholars, all of the nineteenth century, who followed close after Sir William Jones. These were Charles Darwin, who revealed the essential principle of evolution; Abbé Mendel, who illustrated the mechanism of genetic heredity; Francis Dalton, a cousin of Darwin, who founded the study of eugenics; Count Gobineau, who focussed attention on the study of human races or sub-species. Yet this new science hinged, so far as public opinion was concerned, on the theory of evolution, and while that theory remained unestablished the entire science of man remained suspect in the popular mind.

This evidence is now complete, and the common origin of man and the higher apes is beyond dispute. What in fact made proof more difficult, a century ago, was the absence of any evidence of creatures intermediate between the highest living species of ape and the lowest species of man. Where the size of the brain of living human species ranges from approximately 950 cubic centimetres, in the Australian aboriginal, through a continuous variety of gradations to 1400 cubic centimetres in the average North European male, there were no intermediate species of anthropoids to be found between man and the higher apes—which have a brain capacity of some 600 cubic centimetres only. The difference between man and ape remained too great, without the existence of intermediate examples of either living or fossil species, for many of our nineteenth century scholars to accept.

But even this bogey has now at last disappeared. Numerous "missing links" have been identified amongst fossil remains from widely different parts of the earth, and particular interest focuses on recent studies in South Africa, where scientific research into anthropology continues rapidly. As a result of these discoveries, it would appear possible that Africa may be the ancestral home of the human species, who would have spread outwards from the African continent while still in the sub-human or "missing link" stage of development. This theory of an African origin is interesting as the African Negro remains the most ape-like in appearance of all the existing races of man. This does not mean that we are descended from Negroes any more than that we are descended from monkeys, but merely that we share common ancestors with both Negroes and monkeys, and have evolved further and lost the ape-like appearance of our original ancestors which, however, to a greater or lesser extent still characterises Negroes and monkeys.

Following the dispersion of our anthropoid ancestors, separate communities evolved in geographical isolation, and in consequence the work of evolution was able to progress more rapidly. Isolation in widely different climatic and geological areas during the course of the ice ages and their intermediate periods of warmth and plenty, together with the wide variations in diet and even exposure to radioactivity which accompanied such isolation, must have accelerated the rate of mutations and resulted in the development of widely different types amongst early sub-men, exhibiting very different physical, mental and glandular characteristics.

Under such circumstances, of course, those of the sub-human groups which failed to adapt themselves to their environment, or to progress sufficiently to enable them to compete successfully against the rivalry of other groups, were annihilated, (and often eaten) by the more advanced groups. Just as the ape species failed to survive competition unless they developed greater strength or agility, so early sub-human prototypes, which relied on the development of mental ability, tended to be eliminated if mental develop-

ment was insufficient to compensate for the corresponding loss of agility involved in walking upright—a practice made necessary by the weight of the human brain. The outcome of this process of natural selection was that the higher anthropoids became specialised into two groups, apes and men, the one relying upon animal abilities, and the other upon improved intelligence. Any intermediate forms which failed to progress adequately in one direction or the other became extinct, thus creating the apparent problem (until their fossil remains were eventually found) of the “missing link.”

Such is the way of evolution—not towards intellectual development, necessarily, but always towards increased adaptation to the conditions of life at a given time and place. Progress itself is not inevitable; and survival does not always mean specialisation. A rigidly specialised species may be annihilated by a change in environmental circumstances to which it is unable to adapt itself with sufficient rapidity. Intelligence is of particular value because of the versatility which it implies and the fact that it can be used to meet the challenge of changing conditions. Yet even then, we cannot assume that evolution will necessarily ensure man's future progress; indeed, history to date has shown that the reverse could be true. Nature would seem to be a fickle mistress: many promising species have been annihilated in the past by “accidents” of environment.

Scrutinising the evidence of prehistory which has been revealed so far, it would appear that by the second or third interglacial period, somewhere about a quarter of a million years ago, some form of man-like anthropoid who walked erect, possessed fingers and thumbs which could be brought into opposition (thus enabling the more delicate handling of tools than an ape could achieve) had already come into being. This sub-species, or group of related sub-species, has been called Neanderthal man—after the beautiful Neander Valley near Düsseldorf in which the first identifiable remains were found. Before Neanderthal man there must have been many other intermediate sub-human species, from some of which he may have descended, and remains from

these, believed to date mostly from the first or second interglacial periods, have also been found. But the Neanderthal type is the earliest species which may lay any claim to being considered human.

Following the discovery of Neanderthal remains in Germany, similar discoveries were made elsewhere in Europe. The type was primitive, the all-important frontal lobes of the brain were undeveloped, and the jaws were ape-like and protruding, but still it walked erect, and possessed a brain case infinitely larger than that of any ape. Outside Europe, other discoveries were made, and eventually a wide range of fossil remains were uncovered which appeared to belong to the same type, to what has subsequently come to be identified as the Neanderthal assemblage: Solo man, discovered by the Dutch geologist Oppenoorthin on the banks of the Solo river in Java; Rhodesian man, identified by the Boer scientist Dr. Hrdliche; and Peking man, in China, excavated from a hillside rich in prehistoric remains, which for years had been quarried by the Chinese for bones to grind down into magic potions, by the Swedish anthropologist Dr. Andersson. All of these have features in common, and may perhaps be classified as Neanderthal. They show the human species in its earliest level of “human” development, the Old Stone Age, but already widely divergent. Many of these early sub-species must have died out, others undoubtedly mingled their blood with other species which may have been higher or lower in the scale of intellectual development; the blood of some, in fact, must still run in the veins of many “modern” races of man.*

As the isolating effects of the Ice Ages began to wear off, the picture changed. Whereas during the Ice Ages the opportunities for isolation had been far greater, the opportunities and incentive for mobility, for conquest, for the annihilation of or intermarriage with rival species, now be-

*Originally it would seem there may have been one or more distinct breeds of *Homo Sapiens*, which in addition to spreading out over the world and so becoming isolated and developing differently in different places, also in some areas inter-bred with sub-human breeds, and thus accentuated the racial differences which arose as a result of isolation and the hand of evolution.

came correspondingly greater. Most important of all the changes which must have taken place during the last Ice Age, however, was the development somewhere in isolation of a new species of completely modern type. *Homo Sapiens*, without a doubt, at last—with a high brain capacity of 1500 cubic centimetres or so, (larger than that of modern man) with well developed frontal lobes* to the brain, and without the protruding jaws and the sloping, ape-like face which marred the appearance of Neanderthal man. This was Cro-Magnon man, probably the finest physical type that the world has ever produced, and he brought with him, from whatever birthplace nature had chosen for his nurture, a vastly higher level of social and material achievement. With the improvement in climatic conditions he started to roam the earth, and in Europe, in a few centuries, probably, he exterminated Neanderthal sub-man: the evidence of broken skulls would tend to suggest, at least, that the disappearance of the latter was due to his work. He exterminated them—all, that is, except the females, some of whom he definitely retained. Like all conquering races of mankind, he would appear to have kept for his own use females from the tribes he conquered, for several fossils of this period show characteristics which point clearly towards an admixture of the two species, the one highly advanced, the other considerably lower on the scale; and isolated throw-backs to Neanderthal characteristics have ever since appeared amongst the various human races, admixture being greater in some areas such as Asia than in others. Ever since man became more mobile, this retrogressive tendency towards the mixing of the sub-species has progressed with increasing rapidity, until we have the complex and generally blurred pattern which

*It is the frontal lobes of the brain which appear to be the chief centres of coordination of activity at a high level, and on the development of which depend rational, responsible and coherent activity—the factors which go towards the making of a civilisation of rational beings rather than the mere herd instinct of the monkey tribe. It is in the development of the frontal lobes that modern man differs so much from the early sub-human types, and from apes. The Australoids, the most primitive human living sub-species, similar but inferior to the Negroids, are still noticeably behind other modern types in this respect.

we know today.

Whereas Neanderthal man dwelt in caves, the new group of tribes which comprised the Cro-Magnon family appear to have lived out in the open, often, indeed, in quite large encampments, and to have used the caves only as places of sacrifice and worship. Skeletons and remains belonging to this family have been found throughout Europe, from the British Isles to Yugoslavia, and from Denmark (Sweden was probably still under ice) to France and Spain, where mural drawings and paintings, and even clay sculptures executed by them have survived to this day. They appear to have been the first identifiable representatives in a lineal column of the Caucasian, European or Indo-European group of 'races' which we still know today. Elsewhere Nature produced a Mongoloid and also a Negro or Negrito type, both of which would appear to represent substantial admixtures with local varieties of the Neanderthal assemblage.

So matters continued until the emergence of the Neolithic peoples, the early Aryans in eastern Europe. With the Neolithic age, or the New Stone Age, only some 10,000 years ago, we reach "modern" or historic times, when it becomes possible to augment the scanty records of archaeology by recorded history. It is hardly possible to over-emphasise the importance of the new culture brought in by the Neolithic invaders from the east—our own ancestors. For in addition to improved stone implements they brought also animal and plant husbandry to replace hunting and fishing. These invaders came in successive waves, and archaeologists distinguish numerous sub-types such as Danubian, Corded, and Hallstadt, but subsequent intermarriage destroyed such small variations as were distinguishable between them.

Amongst these new inhabitants of Europe, relatives all—or descendents of—Cro-Magnon man, two main types were distinct. Both had high foreheads, large brains, with well developed convolutions and frontal lobes, and both have clean-cut, intelligent features. Both probably began to mix from the earliest periods, or perhaps were never fully

differentiated along the border areas. Both were in any case, closely related when seen from the more distant perspective of human evolution and world anthropology. One, on the southern fringe, was smaller and darker—being known as the “long barrow” men by archaeologists, because they buried their dead in tombs of that shape. These survived into historic times as ‘Iberians’ or ‘Atlanto-Mediterraneans’. They would seem to have been responsible for the early heliolithic civilisations (5000–2000 B.C.) of the Mediterranean, the Middle East and of ancient Egypt, and also it was a related branch of these peoples who founded the early civilisations of the Euphrates, Tigris and Indus valleys. A great deal of ‘Mediterranean’ blood certainly survives amongst the many peoples of Latino-Keltic speech in Wales, for example, and Italy—although the ancient Latins and Kelts were a northern people before their intermarriage in these areas with the Mediterraneans whom they conquered.

The other group, the Nordic body-burning people, who settled to the north of their Mediterranean kinsmen, were protected by the later from close contact with the African and Asiatic races until well into the historical period, and consequently have survived as a fairly distinct sub-species to this day. They are the inhabitants, still, of northern Europe, from the British Isles to the Russian steppes, and from the borders of Lappland to the northern fringe of the Mediterranean. On the Eastern frontiers of Europe they are intermixed as Slavs with Mongolians from Central Asia, while in the southern extremities of Europe, they have mingled (as Greeks, Romans, Goths and Lombards) with the remnants of the old Mediterranean stock to a very large degree, and also with the entirely different peoples of Africa, Asia Minor and Arabia.

Add to these the elements surviving from the older Stone age, still White or ‘European’ in type, however, which give us the broad-headed so-called ‘Alpine’ peoples of the central Alpine range of mountains, wherein the new conquerors scorned to settle thickly, and also in the north survived in lesser numbers as an element in Norway and Germany (as the large-headed ‘Prussian’ type, for example,) and we have

the basic pattern for modern Europe. This pattern became more intricate, of course, with the internal movements of these peoples, as they began to found cities, empires and civilisations in the later Copper, Iron and Bronze ages—the classic period of ancient Greek, Rome and Viking times. But the pattern is still there today and provides an absorbing, delightful and instructive study for those who are able to see the past in the present, to discern the continuous thread of time which runs from the past to the present and from the present into the future, and to trace the effect of biological inherited capacities on the history of man. Let us therefore examine now the nature of this genetic inheritance, and see how the biology of different races and sub-species can have a vital effect on world history.

II

MENDELIAN HEREDITY

Before any proper understanding of the problems and techniques of eugenics or racial hygiene can be mastered, an understanding of 'Mendelian' inheritance is essential. The development of all living things is governed by two factors: by heredity, that is by the character which it receives from the parent or parents, and by environment, by which is meant all those other influences to which any organism is subject in the course of its life history.

Heredity determines the basic character of the organism in every case; it determines whether the organism shall be fish, fowl or good red herring. Environment by contrast works within certain limits, the extent of those limits being determined entirely by heredity.

The mechanism by which the inherited character of the higher animals is determined centres on the *genes*. Each individual is equipped with a set number of genes, which, regardless of environmental influences will convey to the offspring certain qualities and characteristics which were received from the parent. These are in turn determined by a material known as DNA (deoxyribonucleic acid) which has been described as "the ultimate in miniaturisation of information coding." This is so small that all the chromosomes of the earth's three billion human inhabitants would together occupy the space of a pea! Thus, the hereditary equipment of a species which inter-breeds only with its own kind, (that is, with other organisms which carry a similar genetic equipment and are themselves identical in form and character) is virtually constant, and varies only under special conditions which will be discussed later. These genes are associated in pairs, each corresponding pair governing or

containing in it the seeds which control a specific variety of characteristics. It is apparent, therefore, that it is possible for an individual to carry within its genes mixed characteristics, and in these circumstances the offspring will not necessarily resemble the parent. In consequence, where the parental or racial origin is mixed, it is common to get 'throw-backs', or offspring who reveal characteristics that were present in earlier generations, but which were not apparent in either of the immediate parents, due to the fact that the characteristics in question had been carried 'dormant' in the genes.

To make all this intelligible let us consider a simple example in the breeding of poultry. The Andalusian chicken exists in several colours, and if we cross a black Andalusian chicken with a white specimen, we obtain grey offspring.

What has happened here is that we have crossed two chickens, one of which bears a pair of genes which both carry the quality (amongst many other qualities) of *black* coloured features, the other carrying a pair of genes which both bear the quality of *whiteness*. In both parents the pairs of corresponding genes are identical, though in one case they are identically black, and in the other identically white. The offspring of such a cross will, however, be inevitably *grey* in colour, since each of the offspring have inherited one gene from each parent, and each have therefore inherited one black and one white gene, which amongst Andalusians happens to produce grey coloured feathers.

So far the story is simple. But what will happen with other types of crosses? As we may guess, if we cross a white with a white (commonly known as *inbreeding*, since both parents are identical), then as all four genes are white the offspring will *breed true*, and will simply have to be white. But what if we cross a white with one of the new greys?

Mathematics again provides the answer. The white bird carries two *white* genes, and the grey bird carries one *white* and one *black* gene. There are therefore two possible solutions, in one instance, the offspring may inherit two *white* genes, and in the other it may inherit one *white* and one

black, since from the white parent a white gene *must* be inherited, and from the grey bird either a white or a black gene may be taken. The chances are exactly equal, and the number of white and grey offspring will therefore tend to equal each other out. A similar principle will of course apply in the case of a black bird crossed with a grey, half the offspring being black and half grey.

There is one more situation — what happens when there is a cross between two birds of mixed descent? That is to say, when two grey birds produce offspring.

Again it is simple mathematics. Each grey parent carries one white and one black gene. Taking one gene from each parent the possible combinations are therefore two white genes, two black genes, or one white and one black. The important point, however, is that the chances that one white and one grey will be selected are double the chances that either pure white or pure black will result. The offspring of two grey birds will therefore average *one* white bird, with two white genes, *one* black bird, with two black genes, and *two* grey birds, possessing one black and one white gene each. The white and grey birds, having only their own type of gene, will always breed true when crossed with their own kind, but the two greys will behave as the parent greys have done, and may produce white, black or grey, depending largely on the nature of subsequent crosses.

Through this process it will be seen that the genes themselves do not alter in any way, even though they may have been carried in individual birds who outwardly do not indicate the presence of the 'dormant' genes. The genes cannot be changed in character by cross marriage, and the possibility that a gene might be eliminated at the time of selection, although real when we are dealing with individual specimens, is remote when we deal with a number of specimens, since the law of averages will then apply. Dealing with entire populations is a different matter from dealing with individuals. The smaller the population the greater the ease with which the population may be changed in character. The larger the population, the less likelihood there is that any marked change in the genetic equipment will take

place, and certainly the slower any such change will be. Thus the comparatively rapid evolution of man and the higher anthropoids was aided by the smallness and relative isolation of the tribal or intermarrying group—and would have been virtually impossible by natural means in the vast and mobile population units of mankind today.

Outside the laboratory the working out of these simple laws is more difficult to observe, since some genes are *dominant* and others *recessive*.^{*} If the reader has ever bred rabbits, for example, he may already have observed that when a normal brown rabbit is crossed with an albino rabbit (a pure albino) with pink eyes, the offspring do not appear to follow the laws expressed above. The offspring, in fact will reveal a 3:1 ratio in favour of the normal brown rabbits, instead of 1 brown, 2 mixed, and 1 albino. Another "abnormality" which he will note is that if two of the brown rabbits are then crossed they will sometimes produce an albino instead of breeding true, as might be supposed from the foregoing. This phenomenon is due to the *dominant-recessive* pattern, and what has in fact happened is that the two rabbits who have inherited mixed genes, taking one brown and one albino-determining gene from each parent, have not themselves appeared in any intermediate colour, but have resulted in a full brown. The brown gene in their pattern has been *dominant*, although the albino gene has by no means been eliminated,—having become *recessive*. When two browns of mixed parentage are crossed, therefore, they will produce offspring in the following ratio: one rabbit with two brown genes, (a *pure-breeding* brown), one rabbit

^{*}Dominant and Recessive Characteristics: When two distinct types are crossed certain characteristics tend to predominate. These characteristics are called dominant, while those characteristics which only appear in the 'pure' form are called recessive. In the case of eye colour, for example, brown is dominant and blue recessive. The offspring of a cross between 'pure' brown-eyed and 'pure' blue-eyed parents will itself have brown eyes, since the brown-eyed characteristic is dominant. But the gene controlling blue-eyes will nevertheless be present in a recessive condition, and a subsequent cross with another individual carrying the blue-eye gene may produce a blue-eyed individual, even though both parents may be brown-eyed themselves. Since blue-eyes are recessive, however, they will not appear in any individual who carries a brown-eyed gene.

with two albino genes, (a pure-breeding albino), and two rabbits with one brown and one albino gene each. Of these, the pure-breeding brown will be brown, the two with mixed genes will be brown also, because the brown gene is dominant, and the rabbit with two albino genes will be albino (since it carries no brown gene to assert dominance over the albino)—to the surprise of its owner, who will declare nature unpredictable.

There is really nothing more to the laws of heredity than that. Certain complications can and do take place, it is true, due to relatively rare *mutations*,—the seemingly fortuitous changes in the genes which take place occasionally due to excessive exposure to radiation or other factors. One thing which does make heredity difficult to follow among the higher animals, however, is the complexity of higher life, the reproduction of which calls for a greater number of genes. Although in the *Drosophila melanogaster* there are only four sets of genes to be traced, man has as many as twenty-four chromosomes. As a result, therefore, a cross between two species of mankind results in an extremely intricate pattern of genes, since the number of possible patterns is enormous, and if a mixed individual inherits one set of characteristics from one parent there is no indication as to which parent he will follow in the other characteristics.

Once a species becomes mixed, it will be seen from the foregoing that the genes themselves never blend, and no blending of species can take place, other than superficially by the dominance of certain genetic qualities, or materially, by the elimination of all individuals (possibly over a period of many generations) who may exhibit variant characteristics. Actually this latter process can scarcely be called a blend, since it implies the elimination of a specific part of the combined inheritance. Amongst the lower animals, where the genetic pattern is simple, it is relatively easier, of course, to eliminate or isolate the individuals with mixed genes, and to breed only from those which represent one or other pure types. By such a careful eugenic process the Irish Wolfhound was actually bred back into existence after it had been extinct as a pure breed for several generations; but

where mankind is concerned, the complexity is such that there is little possibility of such action, although it is possible to go far with the aid of the *dominant-recessive* pattern in this direction. Theoretically, in fact, if a Hottentot were crossed with an Eskimo, pure Hottentot and pure Eskimo types could be produced from amongst the offspring, but the number of genetic variables in human beings is so great that the number of offspring required to produce, according to the laws of mathematics, one pure specimen of each sub-species would run into millions.

III

SIR ARTHUR KEITH AND EVOLUTION

The development of modern evolutionist philosophy owes much to the pre-eminent English anthropologist Sir Arthur Keith, who turned in his later years to making a synthesis of the observations and reflections which he had accumulated over a lifetime of research. The result of this synthesis is contained in his *Notes on Human Evolution*, which he wrote in a small cottage on the Darwin Estate in Kent, amid the turmoil of the second World War. Dividing his time between digging the small field which was attached to the cottage, to grow more food for the war stricken country, and milking his cattle and feeding his pigs, his synthesis steadily took shape. It deals with the simple facts of human biology, and summarises the life-work of one of the world's greatest scientists.

The great value of Sir Arthur's notes, is not so much the specific information that he quotes regarding early human and pre-human evolution, as his synthesis of the nature and progress of evolutionary development. Carrying the study far beyond the early ventures of Darwin and his immediate successors, Sir Arthur resolved many of the problems which Darwin's work had left unsolved due to insufficiency of data or erroneous deductions, and then went on to ponder on the politico-social import of these laws, indicating, at the same time, how evolution and the genetic mechanism on which the development of species is based are intimately associated with the emergence of sub-species, or as we call these in relation to human beings—races. Races or sub-species are evolutionary variants within a species—experimental forms which are on their way to becoming separate species by

themselves. As sub-species, however, they have not yet lost the power of reproduction when crossed with other members of the species though even when geographical isolation breaks down, outward differences of appearance are usually adequate, in a natural or 'wild' state, to prevent the cross-breeding and consequent merging of sub-species.

One of the anachronisms of Darwinian theory was the difficulty experienced by its exponents when they attempted to reconcile Darwin's law of individual competition and the annihilation of the unfit with the obvious competitive advantages which were to be gained by co-operation. Darwin showed how unfit individuals were eliminated and emphasised the significance of competition between individuals. Early evolutionists in the 19th century were consequently unable to reconcile the evolutionary roles of competition and co-operation which both appeared to contribute towards biological efficiency but yet appeared to represent conflicting ideals. Subsequently, however, the idea of co-operation between the members of *groups* began to emerge, and it came to be appreciated that evolution did not necessarily take place between competing *individuals*. Instead on higher levels competition was a matter of group rivalry and that co-operation between individuals of the same group contributed to evolutionary progress in so far as it increased the solidarity and efficiency of the group and thereby improved the chances of group survival in the ceaseless struggle against rival groups and the challenge of environment. In other words, evolution amongst the higher animals takes place between competing tribes and sub-species.

Thus, in the view of Sir Arthur, a tribe or nation is a corporate body which "nature has entrusted with an assortment of human seed or *genes*, the assortment differing in some degree from that entrusted to any other tribe. If the genes are to work out their evolutionary effect, then it is necessary that the tribe or corporation should maintain its integrity through an infinity of generations." Variations occur from time to time as a result of 'mutations' and other factors, and the popular idea that a mingling of distinct

racés 'will improve the stock,' is in the truest sense of the epithet, nonsense. "If a tribe loses its integrity," Sir Arthur shows, "by a slackening of the social code, by a lack of courage to defend itself from the aggression of neighbouring tribes, or by free interbreeding with its neighbours and thus scattering its genes, then that tribe as an evolutionary venture has come to an untimely end." If a nation with a more advanced, more specialised, or in any way superior set of genes mingles with, instead of exterminating, an inferior tribe, then it commits racial suicide, and destroys the work of thousands of years of biological isolation and natural selection.

The situation is in fact genetically simple. Whether mutations are *dominant or recessive*, if a defect is present then close inbreeding within a small group will result in the concentration of that defect, and subsequent elimination of the group, through inefficiency, whereas if the range of intermarriage is wider, the defect will become more widely disseminated, weakening the entire stock, but will be reduced in its effect on any one individual due to the admixture with healthy individuals. Thus, if weak stock intermarries within itself, the fault is accentuated, and results in destruction. If unhealthy stock crossbreeds instead with healthy stock then the immediate offspring will not be infected so severely, and because the evil seed has now been widely sown the concentration at any one time will be inadequate to result in the elimination of the entire group. Particularly if the defect is recessive, some individuals will be born with the defect, and may be eliminated, but other individuals, carrying the unhealthy seed, will survive, apparently free from infection themselves, only to produce a given percentage of defective stock in later generations. Cross-breeding thus benefits the unhealthy stock; by saving it from elimination, and harms the healthy stock, by infecting it, even though the infection is not immediately disastrous. Inbreeding amongst unhealthy stock, on the other hand, ensures that the unhealthy stock will without exception produce an unhealthy brood, which Nature can usually eliminate within the course of one or two generations only; while

inbreeding amongst healthy stock preserves the healthy collection of genes free from infection. In a 'natural' state, cross-breeding between separate sub-species is exceptionally rare, and is clearly contrary to the normal laws of nature. In an artificial or 'domestic' state, however, cross-breeding, like so many other perversions of natural functions, becomes surprisingly common.

In Darwin's time, the complex nature of genetic inheritance was not then so fully known as now, and the *dominant-recessive* pattern of interaction was not widely appreciated. It was therefore assumed that to eradicate the individual exhibiting the fault was sufficient to eradicate the fault, regardless of other factors. Modern genetics show us, however, that once eugenic patterns get confused, as they do in cross marriages between different species and different races, and between the fit and the unfit, it is rarely possible to eradicate defects. Only if human reproduction takes place within small intermarrying units, each carrying similar genetic characteristics,—between races, that is, for a race is merely a group of people with a similar genetic pattern, and a race is 'pure' or otherwise to the extent that its individuals do have genetic factors in common,—will it be possible to control heredity. There is no way of eliminating undesirable genetic qualities except by annihilating the 'line,' that is by preventing the individual who carries the unfortunate genes from reproducing at all. If one does not wish to go so far as that, then one must at least prevent cross-breeding between healthy and unhealthy stock, for once the entire stock is contaminated there is no solution other than the annihilation of the entire species.

It is indeed remarkable how the concept of *dominant* and *recessive* genes would have invalidated the whole of Darwin's theory, were it not for the inbreeding factor. But for inbreeding amongst small groups, evolution could not take place among the higher forms of life. Where there is no inbreeding and no consequent segregation and elimination of the unfit, evolution amongst the higher forms does not in fact take place. There is no way round it. Nature

provides no answer, and it is open to doubt whether Nature actually has any such aim as evolution or progress. Nature is probably in all its ways blind—like Justice—, and a study of fossils, and even a study of history, will tell how promising races and promising species have been eliminated simply because their course was not that of Nature. Even with our knowledge of genetics, we cannot disregard this warning. The laws of science tell us how Nature works, and what we are to do if we would have the world of Nature, the unbending ruthless world of Nature, smile upon us. If having discovered what to do, we disregard those laws, our fate is of our own choosing. Those who are unfit can improve their prospects only by intermarriage with those who are fit. Those who are fit can suitably destroy their own prospects by marriage with those who are unfit. Already our ancestors have left us a very tangled skein to wrestle with, but if we follow the dictates of the eugenicist, there is the hope always that some sound stock will survive. Today, the people of the Western world need to come to the realization of this all-important fact as soon as it may, otherwise the patterns will be lost, and we will have instead of healthy races which breed true, and produce generally healthy stock in their own likeness, only a confused mass of genetic qualities, good and bad all mingled together, producing repeated failure, and unable to eliminate these failures, no matter how far science may advance. Matters of genetics are absolute and final, and damage once done, can only too rarely, owing to the nature of things, be undone.

IV

DEVOLUTION IN ACTION

One of the most vital facts of human history is that where different races cohabit the same or adjacent living areas cross-breeding is likely to occur, and our actions today can therefore substantially modify the character and quality of subsequent generations of mankind on earth. Taken as a single species, the human kind has existed for many thousands of generations, but this does not mean that all members of the species are alike or of the same quality, and it is quite incorrect to assume that the nations of the present resemble those of the past or that those of the future will be identical to those of the present. The fact that all canines can interbreed does not make them alike, and the same is true of any species. Amongst human beings in particular the distinctive personal characteristics of the individual are of the greatest importance to the future progress of civilisation, and the need to maintain the quality of the breed is a matter which concerns us all, and demands that we should study the laws of biological change which can within a few generations break down and ruin a people or a civilisation, or build up and re-vigorate the peoples within a given district.

Human populations are thus by no means constant when exposed to the effects of modern life. Under 'natural' conditions the balance of environmental factors is such that biological change is generally in one direction—forwards. But today 'civilisation' has changed the natural environment of man (and also of many of the higher animals, particularly those which have become domesticated). Today the law of survival of the fittest no longer holds good amongst human beings and some writers even claim it has been replaced by

the law of survival of the unfittest. In primitive conditions, those who had not the ability to fend for themselves effectively, and to compete with the more capable in the search for food, rarely survived long enough to produce offspring, and if they did the chance was that their offspring would not reach maturity. Today, by contrast, the poorer specimens of humanity have become protected beings, and the more capable are elected by scholarships and examinations to the levels of 'professional' society, in which their birth-rate falls below replacement level. Similarly, in wartime the more capable are chosen as air crew or for other active military service, yet the unfit are usually exempted from danger roles, so that they might survive to produce the generation of the morrow.

It is worthwhile, then, stopping to consider how exactly a biological type changes. How is it that a population can change completely in structure? How can a people decay within only a few generations, so that the kingdoms, civilisations and empires they have raised crumble and disappear into the dust of history? Whatever the value and importance of education might be, there can be no progress, and no maintenance of standards even, if the individuals in a nation are not of sufficiently high quality to maintain that progress or that level. When the biological heritage of a nation declines, then so inevitably must the cultural level.

The biological structure of a population can change in three ways. The first of these is an absolute change in the hereditary equipment of the individual as a result of radiation and other external forces, and this is called 'mutation'. The second is a change in the physical structure brought about by selection, that is to say by the proportionately increased reproduction of certain selected elements of the existing generation which results in a larger proportion of next generation possessing a given set of characteristics than was the case with the previous generation. Let us call this unequal reproduction. The third, and most common factor in this modern world of easy travel, is admixture with alien sub-species, when a new strain is introduced from outside the group.

Mutation is the most deeply mystic of these forces. The important feature about the hereditary equipment of any given organism is the mathematical exactness with which it will produce new organisms according to given laws. Mutations are the rare exceptions to this process which result from outside forces, of which radiation has been shown to be a prime factor. Due however to the fact that we today live under much the same environmental conditions as our earliest ancestors, and we are still exposed to much the same radiational forces that affected our ancestors, it is reasonable to assume that something like a state of equilibrium has been reached by the human race in respect of mutational changes, even if it is a moving equilibrium. It is possible that a marked increase in man-made radiation could seriously affect the mutation rate, and atomic warfare might bring about a cataclysmic downfall in our hereditary equipment.

More significant is the inequality of the reproduction rate between sections of a non-homogeneous population, which can lead to the predominance of one set or type of people within the course of a single generation: hence the insistence of the geneticist that a watch be kept on the all-important question of *who* are becoming the parents of the next generation. In small societies under primitive conditions 'random' drift may take place when, due simply to the smallness and homogeneity of the group, an 'accident' may lead to a variation in the character of the succeeding generations for no obvious or apparent reason, but this is rare amongst larger communities. Normally the question of who has the most offspring within a community—of who sets the pattern of the following generation—is dependent on specific environmental conditions, and as a result a species is subjected to the effect of 'selection', for the Darwinian dogma of 'survival of the fittest' is merely simple selection at work.

In natural circumstances it is unequal reproduction or the elimination of those who are unable to surmount the challenge of environment before they had had the opportunity to reproduce, and to pass on their characteristics to their offspring, that ensures the suitability of the next generation to that environment. In the lower forms of life, this has often

meant a rigid adaptation to given environmental conditions, and the consequent elimination of the entire species should a geographical or climatic change modify the environment too violently to permit the continued existence of this highly specialised form of life. The same is true of many of the higher animals, and so it was that the giant creatures of the last ice age became extinct with the termination of that epoch, but with man the progress towards surmounting the problems of environment has not been so much along a rigid physical adaptation to the need of the surroundings, but rather by the development of intellect and initiative and of a freely associated emotional pattern which allows mankind to adapt itself to new circumstances, and to find fresh ways of meeting changed environmental conditions.

Selection—the elimination before the child-bearing stage of the unfit or the least fit—acts in the natural state not only on individuals within a given population, but also by the elimination of entire species. When two animal species compete for the same living area, the weaker species is usually exterminated, and this rule applied to the earlier tribes of man, and also to the spasmodic warfare between man and sub-man which eventually resulted in the virtual annihilation of sub-man in all parts of the world.

This is the state of affairs in nature. The inflexible law of survival of the fittest holds good, and species are largely homogeneous, so that by close inbreeding the entire species rapidly becomes adapted to the demands of the environment. But such is not the situation in the artificial pattern of life that has been slowly built up by man since he left the 'primitive' stage in which he obeyed the dictates of nature. Nature still rules our lives—we are only flesh and blood, physico-chemical organisms—but in the luxury of our own power, the exultation of triumph and pride at our own prowess, we have forgotten that we are still subject to the laws of nature, and that nature often breaks as well as makes. Many a promising species has been destroyed because it failed to meet her demands or vagaries. Overlooking this, and supremely confident in some mystic sense that evolution must always move mankind yet further along the road of

progress—and still burbling confidently about some future man, possessing yet greater powers of intellect and personality—mankind has deigned to ignore the knowledge which it has acquired of Nature's methods, and has chosen to run counter to these laws. Only a handful of eugenicists and scientists, whose voice is never heard by the masses, remain to remind mankind that we are still subject to the laws of Nature, and these scientists are called "inhumane" for their pains.

The third of the forces which are at work changing the pattern of life from generation to generation is the effect of cross-breeding between sub-species, found mostly amongst domesticated creatures who become liable to perversion of the natural instincts.

According to the law of evolution, species and sub-species (evolutionary adventures which have acquired considerable physical differentiation but which are still capable of inter-breeding) compete one with the other for survival. Thus the stronger, or the best suited, survive, and evolution takes yet another step forward. But this is not the case with modern man. History tells a very different story: it tells of the conqueror enslaving the conquered, taking the women-folk of the conquered into his own household, to become the mothers of his own offspring, it tells of the intermingling of civiliser with savage, of the perpetuation and survival of the conquered, and the annihilation by absorption, instead, of the conqueror. This is the story of Egyptian, Sumerian, Greek, Roman, Persian, Arab, Turkoman and almost every conquering civilisation the world has known. Within a few generations of the conquest the original civilising stock has been swallowed up and absorbed by those whom they conquered, so that the civilisation staggers on without direction for a few more generations, and ultimately collapses due to weakness from within—from an inadequate supply of capable individuals to preserve what the earlier generations had built.

A study of eugenics soon convinces the reader of the danger to which modern man, with his reversed law of 'survival of the fittest', has exposed himself, and a study of

history, of the rise and fall of civilisations and nations, only too readily confirms the teaching of the eugenicist. The concepts of eugenics and evolution are young as yet, they date only from the last century, but they constitute the greatest discovery of mankind. If ever there is any discernible philosophy of history, any moral or lesson which is to be learned from the past, it is the importance of the biological factor in civilisation and society. Environmental conditions in a natural state help to influence and shape the biological heritage, but in the artificial semi-civilised existence which mankind has led for the past two or three thousand years, these natural forces have been thwarted, and the future of the human race has been given up to mere chance. Surely the time has now come when we should start to employ the knowledge we have acquired about heredity and eugenics to proper ends!

V

ARTIFICIAL INSEMINATION: CURSE OR BOON?

Although the popular press has directed considerable attention towards the growing practice of artificial insemination, this attention has been largely concerned with purely sentimental aspects, and has failed to face the far more important eugenic implications of the discovery. As childless adults agree more and more frequently to artificial insemination the question of the biological and genetic fitness of the donor becomes a matter of supreme importance. Thus Dr. Herman J. Müller, one of the world's leading geneticists and recent winner of the Nobel Prize for his work on radiation and genetic endowment, recently created considerable interest by a prediction on the significance of artificial insemination with regard to racial progress and the biological character of nations.

Speaking at a symposium held in New York, Dr. Muller said that 'foster-pregnancy' was steadily gaining a wider social acceptance, and would eventually become socially acceptable. In the future, he believed, it would be generally considered wrong to breed children who reflected all the common weaknesses of sub-normal parents, and this would be avoided by the artificial insemination of either sperm or egg cells derived from healthier individuals, so that the children thus bred would bear no resemblance to the foster parents, and would not, in fact, be their lineal descendents. If the biological fitness or worth of the donor were properly studied, then within a few generations, or within one generation even, a new super-generation could be produced, descended lineally from only the fittest and more capable of the previous generation, and the first nation-state to introduce this procedure would eventually dominate the rest of

the world—so superior would be its individual members.

These ideas come perhaps as a shock to those who have never before considered the significance of eugenics, and to eugenicists they perhaps lift some of the gloom which has surrounded the picture of steady genetic decay which the modern world represents. But at the same time it has given us a new responsibility to ensure that the fabulous power of artificial insemination will be used properly, for matters of genetics are irrevocable.

Let us then consider what all this really means. Simply and plainly it means that although the human foetus must still develop within the human body, and every child must have a mother and be born in the usual way (no test-tube babies nurtured in artificial chemical solutions as yet!), it is possible to artificially insert both the egg and the sperm cell into a foster mother, who can then nurture and give birth to a child who is not her own, and who is not descended from her biologically or genetically in any way. Her child will not look like her, except by chance, but will represent and be descended from the real or 'donor' parents only. In this way, a donor or real parent can, within the course of a few months only, theoretically become the parent of thousands of offspring. It is therefore a matter of serious importance that the donor be properly selected and that to allow for any possible biological oversight no donor should be used as parent for more than a limited proportion of the children thus conceived artificially and born of foster parents.

The discovery of DNA has further increased the possibilities of controlling the genetic constitution of individuals, and through individuals, entire races and populations. Nobel Prize-winner Dr. Edward L. Tatum of the Rockefeller Institute claims that only a few barriers remain to the goal of controlling human heredity by the manipulation of genes. "These barriers," he explained, "are separation of unwanted genes from the chromosomes and then the replacement of corrected material back into the human cell." Thus in addition to straightforward eugenic control, which Dr. Tatum defines as: "being careful who marries whom," and consequent manipulation through artificial insemina-

tion, it seems that within the foreseeable future actual mutations in the chromosomes will be produced in the laboratory. Thus the genetic shape of entire populations will be capable of modification not only by artificial insemination as at present, but also by artificial mutation.

In a 'Brave New World' such as Aldous Huxley pictures, it is quite conceivable that the citizens of a state might be persuaded by propaganda (or even forced) to accept fosterparenthood, in which case future generations would be produced from parents specially selected for this role. These might even be classified, to provide for the production of 'worker' types, 'military' types, 'intellectuals' and 'rulers' and so on. But from a practical point of view, the immediate impact of artificial insemination on our lives will be in the cases of married persons, where one parent is impotent, and artificial insemination is preferred to the adoption of children. One immediate result, therefore, is that since no record of artificially inseminated children will be preserved in birth registers, a birth certificate as a record of parenthood will *cease to prove biological descent!* The family tree as told by the birth register will cease to be reliable, and none of us will be able to prove descent by this means, unless legal steps are taken to ensure that children conceived by artificial insemination have an entry made on their birth certificate to indicate the name of the donor parent—a *precaution which is not being taken at the present time.*

Whether or not any control is exercised over the selection of donors, artificial insemination could change the entire biological pattern of a nation within only a generation or two. English foster mothers agreeing to artificial insemination could find themselves giving birth to Negro or half-Negro children. At the same time, if proper care is taken in the selection of donors, the general decay in the genetic quality of a nation can be largely countered by the choice of high quality donors to fill the gap in the case of barren marriages—which are many. Eugenic and racial decay could be rectified by a wise and proper supervision of the selection of donors, and nations which have been largely mon-

grelised could be rejuvenated through the proper selection of representative donors for artificial insemination.

Although it seems likely that sufficient pressure will eventually be brought to bear upon the government and selection officials to ensure that care is exercised with regard to the selection of fit and healthy donors, this itself will not be enough. To ensure a guaranteed pattern of future reproduction, free from latent defects, which may not appear outwardly in the donor, but which may be present in his genes, it is and will be essential to study the donor stock through several generations! And this cannot be done unless our birth records show accurately the name and identity of his *real* parent: not merely of the foster parent, which is meaningless information. Only by tracing descent through several generations can one be sure that a stock is healthy, and does not contain bad elements. It must be possible to show that the donor has a 'pure' and 'healthy' *genetic* constitution, not merely a seemingly fit body, mind and personality himself. This means that he must be 'racially' pure—capable of breeding true to the healthy lines required. If in his family history there are inherited faults present in his genes, due to earlier crossing with unhealthy stock, then the individual cannot be allowed to donate either egg or sperm. Eventually we must aim to build up a capable and healthy race which will breed only capable and healthy kind. When that is achieved we shall have a 'pure race' (for a pure race is no more than a group of individuals who are capable of interbreeding and reproducing similarly pure kind). To obtain a 'pure race', however, we have to rely on breeding from pure stock: from stock which has proved itself racially true through several generations.

Fortunately, relatively pure healthy stock of every main racial type still does exist, and so the nations and the races of the world, if they act early, can use artificial insemination as a boon to mankind, and so go far towards breeding back the 'ideal' types that must once have existed—or even improve on these types. We in Northern Europe for our part can perhaps hope to recreate a society comparable to that

of the Heroes of Asgard. But if used negligently, or if misused, then artificial insemination can be the final disaster to our hopes and aspirations. Imagine how terrible could be the effect if a thoughtless nation allowed the choice of selection to fall into the hands of miscegenist-minded one-worlders, or any who wish to see our race and our heritage destroyed. This would be a crime so totally tragic that no event in the history of mankind, of evolution, or even of the entire solar system could compare in merciless cruelty.

A BELIEF IN THE FUTURE

Clear thinking on Race and Eugenics? We suppose it is rather early to expect the uniformed and careless mass of mankind to accept such ideas. A number of our early forbears did practice a crude form of eugenics—the Spartans for one and the Indo-Aryans for another—and the agricultural revolution in eighteenth century Europe was based on ideas of selective breeding of both plants and animals, but the true significance of biological forces has only been appreciated since the late nineteenth century, since the development of the theory of evolution and the discovery of Mendelian heredity. What is more, these scientific views have come on the stage at a time when sentimentalism is deeply rooted in the public mind, and “internationalists” preach the equality of man, regardless of biological inequalities, and try to prove that one CAN make a silk purse out of a sow’s ear, in direct contradiction to the ancient Teutonic folk-dictum. Yet unless something is done, and done quickly, it seems that mankind, with its present mania for race-mixing (largely the product of the blind war-propaganda of the 1939-45 war), intends to throw away its heritage, renounce the future, and consign progress to the limbo.

To those who feel a loyalty beyond the limits of their own generation—to the untold generations which are still to come—to those who thrill to the story of man and the greatness of human achievement, to those who would yet see a bright future for mankind, and who would yet build that “brave new world” of which we have dreamed for so long, there is one salient priority—*we must at all costs protect the biological heritage that is within us.* Environmental care and

improved schooling techniques for backward children can do much for sub-standard individuals, but environment can only work between limits which are determined by biology and heredity. It is up to us to focus attention away from the present sentimental fixation on the handicaps of those who are backward, and focus it *onward*, instead, to the welfare and well-being of the untold generations which are yet to come in the future. To allow our ideas to become fixed in the present generation is sheer selfishness; we have to be prepared to tighten our belts today for the sake of the generations of tomorrow. When we die we cease to exist as individuals, perhaps, but the life that was in our bodies carries on in that of our children: the life which is in our nation continues, and it is therefore up to us to ensure that that life is clean, pure and healthy. Marriage, home and family is not just something that follows automatically after a romantic sexual liaison formed casually while ‘on vacation’, as Hollywood would sometimes have us believe. It is much more than that, it is our duty to the past and our duty to the future, the link which joins us to history and ties us to eternity, and the care with which we make our choice of a partner is far and away the most real and important moral duty we possess.

To think and practice eugenic and racial morals ourself is our duty, but this is not enough in the troubled state of the world today. It is necessary for each and every one of us to work to bring these ideas home to our fellow beings. We must talk and write about eugenics and race; we must help to make the ideas “fashionable” as quickly as we can. Let there be no confusion, also, between the two concepts—for basically they are one and the same. A race is a group of individuals who possess a similar genetic heritage, and who when crossed are capable of breeding true. A race is consequently pure or impure according to its ability to breed true, and to produce its own kind. Biological accidents do occur, and these may result in the defects which eugenics seeks to remove from the mainstream (not necessarily by inhumane means), but differences in emotive, intellectual and physical constitution, where not acquired, are largely

racial, the product of the importation of a different pattern of genes.

So long as it is admitted that any one individual may be biologically different from another, then it follows that 'ethnic' groups or 'races' must exist, no matter how blurred their outline may be in some cases. Today mankind, in a welter of sickly sentiment, seeks to destroy the biological and evolutionary structure on which the whole edifice of human progress is raised, thus to discard the work of thousands of generations of evolutionary specialisation and shaping. We can only prevent the destruction of this edifice if we take it upon ourselves to overcome our inherent shyness of such topics, to forget that we might possibly say something that might offend our neighbours, and start talking about race, racial hygiene and human eugenics. Only thus can we ensure that our children and—their children—will be able to find fitting partners for marriage. Only thus can we ensure the survival of our own kind and our own species—and also lay the foundations for a noble future. Human stock-breeding is surely not a bad thing when exercised voluntarily and intelligently, and when its aim is to preserve an aristocracy of mankind.