

## EUGENICS

By FRANZ BOAS

PROFESSOR OF ANTHROPOLOGY, COLUMBIA UNIVERSITY

THE possibility of raising the standards of human physique and mentality by judicious means has been preached for years by the apostles of eugenics, and has taken hold of the public mind to such an extent that eugenic measures have even found a place on the statute books of a number of states, and that the public conscience disapproves of marriages that are thought bound to produce unhealthy offspring.

The thought that it may be possible by these means to eliminate suffering and to strive for higher ideals is a beautiful one, and makes a strong appeal to those who have at heart the advance of humanity. Our experiences in stock and plant breeding have shown that it is feasible, by appropriate selection, to improve the breed in almost any direction that we may choose: in size, form, color; and even in physiological functions, as in the rapidity of development, in fertility or mentality. It is, therefore, more than probable that similar results may be obtained in man by careful mating of appropriately selected individuals—provided that man allows himself to be selected in the same manner as we select animals. We have also the right to assume that, by preventing the propagation of mentally or physically inferior strains, the gross average standing of a population may be raised.

Although these methods sound attractive, there are serious limitations to their applicability. It is obvious, from a purely biological point of view, that only those features that are hereditary can be affected by eugenic selection. If an individual possesses a desirable quality the development of which is wholly due to environmental causes, and that will not be repeated in the descendants, its selection will have no influence upon the following generations. It is, therefore, of fundamental importance to know what is hereditary and what not. We all know that features or color of hair and skin are hereditary; in other words, that in these respects children resemble organically their parents, no matter in what environment they may have been brought up. In other cases, however, the determining influence of heredity is not so clear. We know that stature depends upon hereditary causes, but that it is also greatly influenced by more or less favorable conditions during the period of growth. We know that rapidity of development is no less influenced by these two causes, and that, in general, the more subject

an anatomical or physiological trait is to the influence of environment, the less definitely can we speak of a controlling influence of heredity, and the less are we justified in claiming that nature, not nurture, is the deciding element. It would seem, therefore, that the first duty of the eugenist should be to determine empirically and without bias what features are hereditary and what not.

Unfortunately this has not been the method pursued; but the battle-cry of the eugenists, "Nature not nurture," has been raised to the rank of a dogma, and the environmental conditions that make and unmake man, physically and mentally, have been relegated to the background.

It is easy to see that in many cases environmental causes may convey the erroneous impression of hereditary phenomena. We know that poor people develop slowly and remain short of stature as compared to wealthy people. We may find, therefore, in a poor area, apparently a low hereditary stature, that, however, would change if the economic life of the people were changed. We may find proportions of the body determined by occupations, and apparently transmitted from father to son, provided both father and son follow the same occupation. It is obvious that the more far-reaching the environmental influences are that act upon successive generations, the more readily will a false impression of heredity be given.

Here we reach a parting of the ways of the biological eugenist and the student of human society. Most modern biologists are so entirely dominated by the notion that function depends upon form, that they seek for an anatomical basis for all differences of function. To give an instance: they are inclined to assume that higher civilization is due to a higher type; that better health depends upon a better hereditary stock; and so on. The anthropologist, on the other hand, is convinced that many different anatomical forms can be adapted to the same social functions; and he ascribes, therefore, greater weight to the functions, and believes that in many cases differences of form may be adaptations to different functions. He believes that different types of man may reach the same civilization, that better health may be produced by better bringing up of any of the existing types of man. The anatomical differences to which the biologist reduces social phenomena are hereditary; the environmental causes which the anthropologist sees reflected in human form are individually acquired, and not transmitted by heredity. It would lead us too far to prove the correctness of the anthropologist's view. It must suffice to point out a very few examples. Sameness of language acquired under the same linguistic environment by members of the most diverse human types, sameness of food selected from among the products of nature by people belonging to the same cultural area, similarity of movements required in industrial pursuits, the habits of sedentary or nomadic life, all of which are distributed

without any reference to physical type, will illustrate that there is ample evidence showing the lack of relation between social habits and physical type.

The serious demand must, therefore, be made that eugenists cease to look at the forms, functions, and activities of man from the dogmatic point of view according to which each feature is assumed to be hereditary, but that they begin to examine them from a more critical point of view, requiring that in each and every case the hereditary character of a trait must be established before it can be assumed to exist.

The question at issue is well illustrated by the extended statistics of cacogenics, of the histories of defective families. Setting aside for a moment cases of hereditary pathological conditions, we find that alcoholism and criminality are particularly ascribed to hereditary causes. When we study the family histories in question, we can see often, that, if the individuals had been protected by favorable home surroundings and by possession of adequate means of support against the abuse of alcohol or other drugs as well as against criminality, they would not have fallen victims to their alleged hereditary tendencies, any more than many a weakling who is brought up under favorable circumstances. Their resistance to the temptations of their environment would have entitled them to be classed as moral heroes. The scales applied to the criminal family and to the well-to-do are clearly quite distinct; and, so far as heredity is concerned, no more follows from the collected data of delinquency than would follow from the fact that in an agricultural community the occupation of farming descends from father to son.

Whether or not constitutional debility based on hereditary causes may also be proved in these cases, is a question by itself that deserves attention; but neither can it be considered as proved, nor do we grant that the selection of delinquents would eliminate all those who possess equal constitutional debility.

Basing our views on the observed fact, that the most diverse types of man may adapt themselves to the same forms of life, I claim that, unless the contrary can be proved, we must assume that all complex activities are socially determined, and not hereditary; that a change in social conditions will change the whole character of social activities without influencing in the least the hereditary characteristics of the individuals concerned. Therefore, when the attempt is made to prove that defects or points of excellence are hereditary, it is essential that all possibility of a purely environmentally or socially determined repetition of ancestral traits be excluded.

✧ If this rigidity of proof is insisted on, it will appear that many of the data on which the theory of eugenics is based are unsatisfactory, and that much greater care must be exerted than finds favor with the enthusiastic adherents of eugenic theories.

All this does not contradict the fact that individual physical and mental characteristics are hereditary, and that, by proper selection from among the large series of varying individual forms that occur among all types of people, certain strains might be selected that have admirable qualities, while others might be suppressed that are not so favored.

It is claimed that the practical application has become a necessity because among all civilized nations there is a marked tendency to general degeneration. I do not believe that this assertion has been adequately proved. In modern society the conditions of life have become markedly varied as compared with those of former periods. While some groups live under most favorable conditions, that require active use of body and mind, others live in abject poverty, and their activities have more than ever before been degraded to those of machines. At the same time, the variety of human activities is much greater than it used to be. It is, therefore, quite intelligible that the functional activities of each nation must show an increased degree of differentiation, a higher degree of variability. Even if the general average of the mental and physical types of the people has remained the same, there must be a larger number now than formerly who fall below a certain given low standard, while there must also be more than formerly who exceed a given high standard. The number of defectives can be counted by statistics of poor relief, delinquency and insanity, but there is no way of determining the increase of those individuals who are raised above the norm of a higher standard. Therefore they escape our notice. It may, therefore, very well be that the number of defectives increases, without, however, influencing the value of a population as a whole, because it is merely an expression of an increased degree of variability.

Added to this is the fact that, arbitrarily selected, absolute standards do not retain their significance. Even if no change in the absolute standard should be made, the degree of physical and mental energy required to keep one's self under modern conditions above a certain minimum of achievement is greater than it used to be. This is due to the greater complexity of our life and to the increasing number of competing individuals. Greater capacity is required to attain a high degree of prominence than was needed in other periods of our history. The claim that we have to contend against national degeneracy must, therefore, be better substantiated than it is now.

This problem is further complicated by the advances of public hygiene, which have had the result of lowering infant mortality, and thus have brought about a change in the composition of the population, in so far as many who would have succumbed to deleterious conditions in early years enter into the adult population and must have an influence upon the general distribution of vitality.

There is still another important aspect of eugenics that should

make us pause before we accept this new ambitious theory as a panacea for human ills. The radical eugenicist treats the problem of procreation from a purely rationalistic point of view, and assumes that the ideal of human development lies in the complete rationalization of human life. As a matter of fact, the conclusions to be drawn from the study of the customs and habits of mankind show that such an ideal is unattainable, and more particularly that the emotions clustering about procreation belong to those that are most deeply seated in the human soul, and that are ineradicable.

Here again the anthropologist and the biologist are at odds. The natural sciences do not recognize in their scheme a valuation of the phenomena of nature, nor do they count emotions as moving forces: they endeavor to reduce all happenings to the actions of physical causes. Reason alone reigns in their domain. For this reason the scientist likes to look at mental life from the same rational standpoint, and sees as the goal of human development an era of reason, as opposed to the former periods of unhealthy fantastic emotion.

The anthropologist, on the other hand, can not acknowledge such a complete domination of emotion by reason. He rather sees the steady advance of the rational knowledge of mankind, which is a source of satisfaction to him no less than to the biologist; but he sees also that mankind does not put this knowledge to purely reasonable use, but that its actions are swayed by emotions no less now than in former times, although the increase of knowledge limits the extreme forms of unreasonable emotional activities. Religion and political life, and our everyday habits, present endless proofs of the fact that our actions are the results of emotional preferences, that conform in a general way to our rational knowledge, but which are not determined by reason; that we rather try to justify our choice of action by reason than have our actions dictated by reason.

It is, therefore, exceedingly unlikely that a rational control of one of the strongest passions of man could ever succeed. If even in matters of minor importance evasion of the law is of common occurrence, this would be infinitely more common in questions that touch our inner life so deeply. The instinctive repugnance against eugenic legislation is based on this feeling.

It can not be doubted that the enforcement of eugenic legislation would have a far-reaching effect upon social life, and that it would tend to raise the standard of certain selected hereditary strains. It is, however, an open question what would happen to the selected strains owing to the changed social ideals; and it is inexcusable to refuse to consider those fundamental changes that would certainly be connected with eugenic practice, and to confine ourselves to the biological effect that may be wrought, for we know that in the great mass of a healthy

population the social stimulus is infinitely more potent than the biological mechanism.

Although we are ignorant of the results of a rigid application of eugenics, a few of its results may be foretold with great certainty.

The eugenist who tries more than to eliminate the unfit will first of all be called upon to answer the question what strains are the best to cultivate. If it is a question of breeding Indian corn or chickens, we know what we want. We desire a large yield of good corn, or many eggs of heavy weight. But what do we want in man? Is it physical excellence, mental ability, creative power, or artistic genius? We must select certain ideals that we want to raise. Considering then the fundamental differences in ideals of distinct types of civilization, have we a right to give to our modern ideals the stamp of finality, and suppress what does not fit into our life? There is little doubt that we, at the present time, give much less weight to beauty than to logic. Shall we then try to raise a generation of logical thinkers, suppress those whose emotional life is vigorous, and try to bring it about that reason shall reign supreme, and that human activities shall be performed with clock-like precision? The precise cultural forms that would develop can, of course, not be foretold, because they are culturally, not biologically, determined; but there is little doubt that within certain limits the intensity of emotional life—regardless of its form—and the vigor of logical thought—regardless of its contents—could be increased or decreased by organic selection. Such a deliberate selection of qualities which would modify the character of nations implies an overestimation of the standards that we have reached, which to my mind appears intolerable. Personally the logical thinker may be most congenial to me, nevertheless I respect the sacred ideals of the dreamer who lives in a world of musical tones, and whose creative power is to me a marvel that surpasses understanding.

Without a selection of standards, eugenic practise is impossible; but if we read the history of mankind aright, we ought to hesitate before we try to set our standards for all time to come, for they are only one phase in the development of mankind.

This consideration applies only to our right to apply creative eugenic principles, not to the question whether practical results by eugenic selection can be attained. I have pointed out before how much in this respect is still hypothetical, or at least of doubtful value, because the social factors outweigh the biological ones.

At the present time the idea of creating the best human types by selective mating is hardly a practical one, because it dwells only as a desirable ideal in the minds of some enthusiasts.

The immediate application of eugenics is rather concerned with the elimination of strains that are a burden to the nation or to themselves,

and to raise the standard of humanity by the suppression of the progeny of the defective classes. I am doubtful whether eugenics alone will have material results in this direction, for, in view of the fundamental influence of environmental causes, that I set forth before, it is perfectly safe to say that no amount of eugenic selection will overcome those social conditions by means of which we have raised a poverty and disease-stricken proletariat, which will be reborn from even the best stock, so long as the social conditions persist that remorselessly push human beings into helpless and hopeless misery. The effect would probably be to push new groups of individuals into the deadly environment where they would take the place of the eliminated defectives. Eugenics alone can not solve the problem. It requires much more an amelioration of the social conditions of the poor which would also raise many of the apparently defective to higher levels.

Another aspect of the problem is of much more vital importance to mankind. The object of eugenics is the raising of a better race and to do away with increasing suffering by eliminating those who are by heredity destined to suffer and to cause suffering. The humanitarian idea of the conquest of suffering, and the ideal of raising human efficiency to heights never before reached, make eugenics particularly attractive.

I believe that the human mind and body are so constituted that the attainment of these ends would lead to the destruction of society. The wish for the elimination of unnecessary suffering is divided by a narrow margin from the wish for the elimination of all suffering. While, humanely speaking, this may be a beautiful ideal, it is unattainable. The performance of the labors of mankind and the conflict of duties will always be accompanied by suffering that must be borne, and that men must be willing to bear. Many of the works of sublime beauty are the precious fruit of mental agony; and we should be poor, indeed, if the willingness of man to suffer should disappear. However, if we cultivate this ideal, then that which was discomfort yesterday will be suffering to-day, and the elimination of discomforts will lead to an effeminacy that must be disastrous to the race.

This effect is further emphasized by the increasing demands for self-perfection. The more complex our civilization and the more extended our technical skill and our knowledge, the more energy is demanded for reaching the highest efficiency, and the less is it admissible that the working capacity of the individual should be diminished by suffering. We are clearly drifting towards that danger-line where the individual will no longer bear discomfort or pain for the sake of the continuance of the race, and where our emotional life is so strongly repressed by the desire for self-perfection—or by self-indulgence—that the coming generation is sacrificed to the selfishness of the living. The phenome-

non that characterized the end of antiquity, when no children were found to take the place of the passing generations, is being repeated; and the more vigorously the eugenic ideals of the elimination of suffering and of self-development are held up, the sooner shall we drift towards the destruction of the race.

Eugenics should, therefore, not be allowed to deceive us into the belief that we should try to raise a race of supermen, nor that it should be our aim to eliminate all suffering and pain. The attempt to suppress those defective classes whose deficiencies can be proved by rigid methods to be due to hereditary causes, and to prevent unions that will unavoidably lead to the birth of disease-stricken progeny, is the proper field of eugenics. How much can be and should be attempted in this field depends upon the results of careful studies of the law of heredity. Eugenics is not a panacea that will cure human ills, it is rather a dangerous sword that may turn its edge against those who rely on its strength.