



THE VITAL IMPORTANCE OF EUGENICS

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EUGENICS is running the usual course of many new ideas. It has ceased to be regarded as a fad, is now receiving serious study, and in the near future will be regarded as an urgent practical problem.

It is convenient to pigeonhole our ideas, and the usual way of pigeonholing our ideas on eugenics is to divide the subject into negative and positive. Negative eugenics is concerned with preventing degeneration, while positive eugenics aims at the improvement of the human stock. Perhaps a better method of classification is to divide the subject into short-range and long-range eugenics. Short-range eugenics concerns itself merely with altering the proportions of already existing and commonly recurring human types within the total population, while long-range eugenics sets itself the aim of bringing new types into existence. And both of these, of course, have their positive and their negative sides. I said that short-range eugenics aimed *merely* at altering the proportions of existing kinds of human beings. That *merely* must be taken in relation to the much larger aims of long-range eugenics, and to the slow and enormous processes of evolution in general. In relation to human history (itself so far a short-range process, biologically considered), short-range eugenics is of utmost importance, and may well turn out to be the most urgent human problem of the next few centuries. For do not let us forget that the human race

consists of an astounding variety and range of different kinds of men. From savage to Nordic business man, from hunting pygmy to Chinese sage, the race is prodigal in types; and even within the single race or nation we range from imbecile and moron to man of talent or genius; from those congenitally weak and susceptible to disease to those born to be champion athletes; from those who through inheritance lack moral or æsthetic feeling to those hypersensitive to virtue or to beauty. And even when we have made all allowances for environment and upbringing, the major part of these differences in type are due to differences in inborn constitutions. Even if we leave the rare extremes out of account, the monsters and the idiots, the hypersensitives and geniuses, any reshuffling of the proportions of the types that are left will be important enough. It matters a great deal whether one quarter or three quarters of the community shall have brains of poor quality or of good quality; whether the proportion of those endowed by nature with initiative be halved or doubled; whether, when we have made England a home fit for heroes to live in, we shall find that there are fewer heroes and more human sheep to inhabit it; whether congenital debility and defect go up or down.

Let us take in illustration the case of mental defect. I am using the term mentally defective in its strict sense—someone with such a feeble mind that

he cannot support himself or look after himself unaided—and not in the loose sense which would include the much larger class of borderline types generally called morons by American writers. The number of such mentally defective persons in Great Britain is now over three hundred thousand, according to a very careful Government Report published in 1929; in other words, one in every hundred and twenty of our population is through sheer insufficiency of brains incapable of pulling his weight in the national life; and this, of course, leaves on one side all those incapable on account of insanity or of purely physical handicap.

That is bad enough. But there is worse behind it. Another committee reporting on the same subject twenty-five years previously found a far lower proportion of mental defectives.* We are making two mental defectives grow where only one grew before.

The only plausible reason advanced for this state of affairs is that it is an effect of the improvement in our measures of public health and preventive medicine, especially with regard to infant welfare. Mentally defective children are on the average less resistant in other ways; and their usual upbringing leaves more to be desired than that of normal children. Accordingly, if our infant-welfare schemes save a thousand babies which otherwise would have died, we are likely to save a disproportionate number of mentally defective children among them. Nine hundred and ninety of them may be fine babies, whose preservation is a national asset; but if the remaining ten are mental defectives, and if ten per thousand is a higher proportion of

defectives than exists in the population at large, then we are increasing the percentage of defectives in the new generation. By reducing the rigor of natural selection, we are allowing an undue proportion of unfit types to survive. And as in all probability new hereditary varieties towards defectiveness are more common than those towards an improvement of the type, there is no saying where such a process may end.

What is to be done about it? The purely biological method of keeping the stock up to standard by natural selection is, though effective, cruel and uneconomical. It involves wholesale destruction to make sure that the few types you want destroyed shall be included in the holocaust, thus showing a resemblance to Elia's account of the original method for obtaining roast pork. It is of the essence of civilization to set its face against such haphazard, blind, and wasteful methods.

There is only one immediate thing to be done—to ensure that mental defectives shall not have children. Whether this should be achieved by the prohibition of marriage or, as many believe, by combining the method of segregation in institutions with that of sterilization for those who are at large, is not our present concern. We want a general agreement that it is not in the interests of the present community, or the race of the future, or the children who might be born to defectives that defectives should beget offspring. When discussing concrete proposals this simple question should always be kept in mind—"Do you want mentally defective people to have children?"

If, by whatever means, defectives can be prevented from reproduction, then, since the considerable majority of mental defect is due to hereditary factors, it will decrease from generation to generation. The decrease will unfortunately not be very fast, since much

* It may be objected that the increase from then to now might be only apparent, due to a greater ease in the ascertainment of defect; the earlier committee simply missed a lot of defectives. But, for a variety of technical reasons, this appears quite definitely not to be the case. At its face value the increase in twenty-five years represents an actual doubling of the percentage of mental defectives. When all possible allowances have been made, the real increase it would seem must be not less than fifty per cent.

hereditary defect is caused by what are known as recessive factors, which can be carried in a latent state by apparently normal people. When two such "carriers" mate they will produce a certain proportion of defective children. But in spite of this, to prevent defectives themselves from having children would in point of fact steadily decrease the percentage of defectives and of carriers in each generation.

The next step, could it but be achieved, would be to discover how to diagnose the carriers of defect. If these could but be detected, and then discouraged or prevented from reproduction, mental defect could very speedily be reduced to negligible proportions among our population. There is nothing inherently improbable in our being able to discover a test for carriers: but we have not done so yet, and have no very immediate prospect of doing so in the future.

II

I have spent some time over this question, since it brings up the issues of short-range eugenics in clear-cut form: There is in process a change in the proportion of genetic types within our population; it is a regrettable change; we can give a reasonable explanation for it, and we can envisage practical measures for putting an end to the racial degeneration which it involves.

But a more penetrating prophecy of degeneration has recently been given by Dr. R. A. Fisher, whose mathematical talents, so long devoted to the analysis of experimental agriculture, are now vivifying eugenics as well as the general theory of evolution.

His starting point is the celebrated observation made by Galton, that noble (or other) families whose representatives marry heiresses tend to die out with abnormal frequency. This fact Galton brilliantly explained by

pointing out that the heiresses would not have been heiresses if they were not members of very small families, so that the probability was that they inherited, together with their wealth, a congenital tendency to low fertility. Thus two factors which are not of necessity interconnected, female wealth and low fertility, are automatically brought into correlation.

Fisher has simply generalized this particular case and applied the principle to society as a whole. He points out that in primitive societies, organized for efficiency in war, with polygamy as the recognized practice, the qualities which made for success would in general come to be coupled with an increased fertility. For prowess, on the whole, would lead to success, and success to more wives: while large families are not only honored and applauded but, far from being an economic or social drag, are a help and a solace to their parents. But the historical change from tribal times, through an aristocratic period where wealth was based on land, to unrestricted commercialism or individualism, particularly since coupled with the change to monogamy, and particularly in its later stages, when the world is filling up, has completely altered the picture. And Fisher lays down as a general law that in any society of our general economic type the two biologically independent variables of those tendencies making for success and those making for low fertility, of social necessity become coupled together. And since these tendencies are largely genetic, the result is a progressive and cumulative diminution within the population of the proportion of gene-units making for success and, therefore, of the successful type of person.

I speak of "tendencies." These may be of the most varied nature. The tendencies making for low fertility may be purely physiological, such as defects

in the reproductive apparatus; they may be temperamental, like extreme caution; they may have a more complex psychological basis, as when ambition overrides desire for children, and the tendencies making for success may be pure intellect or mere energy, charm, or ruthlessness, personal magnetism or literary genius. So long as there is any hereditary basis for any, the coupling of them together can have only one result—the decrease within the stock of the qualities which make for success. For of two business or professional men of equal brains and ability but with a different number of children, the one with the fewer children will usually be able to concentrate more on his work, to avoid more worries, to rise more rapidly; and, what is biologically even of greater importance, his children will receive a better education, more chances of travel and pleasure, a more favorable start in life, a greater financial inheritance at his death, and be able to contract marriages which socially and financially are more desirable. Conversely, of two men with the same-sized families, but of differing abilities, the one with more of the qualities making for success will usually rise the faster. And this applies throughout society in so far as society is commercial and individualistic. It will not apply of necessity to the lowest grades of unskilled labor; but as this stratum must presumably contain more than its due proportion of unsuccessful types who have slipped down the social ladder, and as families in this stratum are well above the average, actually it provides no exception. The only notable exception concerns that type of agriculture in which the children can be usefully employed from an early age, and are, therefore, an asset; but this constitutes but a very small and a decreasing fraction of modern society.

Let us give two examples to point the moral. Most people would agree that

men who have been educated at Harvard come from stock which is above the average of success in America. Now if Harvard were to recruit itself entirely from the sons of its alumni, then, even if every Harvard man were compelled to send his sons to the old college, the institution would progressively and quite rapidly decline; for the average number of sons which Harvard alumni now have is not three or four, as it would have been in earlier ages, not even one, which is necessary to maintain the absolute numbers of Harvard-educated stock, but only about three-fourths.

The other example comes from England. In the Census of 1911—the only one for which accurate figures on this subject are available—the population was grouped into five main economic classes, of which the highest included all the professional classes, as well as some others, while the lowest consisted of unskilled labor. This lowest economic class had a fertility which, even after all corrections were made for infant mortality, age of marriage and so forth, was not only about double that of the professional group, but was nearly fifty per cent above that of the population as a whole. As a result, the economically least successful twenty per cent of the working population existing in 1911 gave rise to about twenty-five per cent of the next generation of Englishmen.

Fisher goes on to point out that, far from man being universally more exempt from natural selection than are wild species of animals or plants, in regard to one characteristic at least he is exceptionally subject to selective influences, and that is fertility. The reason for this is that human beings vary far more in regard to their actual fertility than do wild species of animals or plants. Lions may vary from, say, two to five in number of offspring, snowshoe rabbits from perhaps three to

twelve; but human families range regularly from zero to ten, fifteen, or even twenty. The number of couples with two, one, or no children is relatively large; and thus the possessors of six, five, or even four children are at an enormous reproductive advantage. If this were all, then the quicker-multiplying stocks would simply increase at the expense of the slower, a process which we may observe in Eastern Canada to-day. But if other qualities, desirable or undesirable, come to be associated with fertility, then the automatic reproductive selection which fertility brings will change the stock in these regards as well. And the evolutionary changes thus effected can be, as Fisher points out, far more rapid than any evolutionary change brought about by selection in any non-human species.

What, then, is the effect of this coupling, which has come into being through the agency of our economic system, between the tendencies to failure and fertility? There are tender-minded people and liberal doctrinaires who will argue that the qualities which make for success are on balance not particularly good, or even that they are evil. Ruthlessness, egotism, vulgarity, double-dealing, subservience, the limitations that are willing to concentrate on dull routine—all these only too often make for success, and it is a good thing that the race should be purged of them.

Granted; but we must not forget that brains, energy, concentration, special gifts, devotion to ideals—these, too, in general make for success. And most people would, I think, agree that this second list more than counterbalances the first; for even if vulgarity and ruthlessness and the rest are unpleasant, they can be combated; but without brains, energy, and special talents the world would both collapse and cease to be worth living in. It is true that there is scriptural warrant for the view that

the meek shall inherit the earth, and a tendency in that direction is one result of our modern civilization. But it is only one result; the other tendencies are for the stupid to inherit the earth, and the shiftless, and the imprudent, and the dull. And this is a prospect neither scriptural nor attractive.

III

I, for one, regard the state of affairs as extremely gloomy. What may be the remedies for it? One is to alter your whole economic and social system; but that, however desirable, could only be brought about so slowly that the cumulative dysgenic process would have had time to work a very great deal of harm before the remedy began to be effective. This may be the ultimate goal; but meanwhile we need some remedy which will work within the limits of our existing system.

R. A. Fisher himself suggests a comprehensive scheme of family allowances, not restricted to the laboring classes, but running right through society; not all on the same scale but with the amount per child proportional to the man's total or, at least, his earned income. The extension throughout society is necessary if the progressive reduction in the numbers of the best-trained, most intelligent, and most successful stocks is to be checked. By the same token, the second proviso is also necessary. A contribution per child which would mean a great deal to an unskilled laborer would be trifling to a professional man, while the really successful would not even find it worth while to fill in the necessary forms. The proviso has the additional merit that it is elastic. If the economic system changes so that the manual workers receive more, the manufacturer or organizer less, their family allowances will go up or down to suit the new scale.

At first sight, such a scheme may appear unjust and undemocratic, pushing to extreme lengths the principle of giving to those who already have. But if we look at it in its true light, the injustice is seen to be apparent only. The scheme is simply intended to remedy the existing economic disadvantages of having children: it is an adjustment of wages or salaries to the conditions of family life. Under our present economic system, we pay different amounts to different groups of people: one group, say, gets two hundred pounds a year, another group two thousand. In each group the man with children is being economically handicapped, while the childless man is for all practical purposes receiving a bonus for his childlessness. The suggested scheme of family allowances is merely intended as a biological measure, designed to equalize matters within each group, by correcting wages or salary for number of children. If society decrees that the poorer classes shall be better paid, or that the richer shall get less, the correction automatically follows suit. But it is a correction which has to be applied for biological reasons, and in applying it we must accept economic facts as we find them.

For the wage-earning classes the system of wage-pools already successfully adopted as the basis of the widespread system of family allowance in vogue in France would be satisfactory; and a similar method could be applied to many of the professional classes. With those who draw money from many sources, like doctors, it would be more difficult to devise a scheme which could be put into immediate operation; but once the principle had been agreed on, its general application could be slowly but surely worked out.

It is difficult to see any other measure which would have any marked effect on this degenerative tendency,

apart from radical change in economic system, as in Russia, or equally radical change in social system, involving State charge of children; and even with such a comprehensive scheme of family allowances, it is difficult to believe that the process would be wholly checked, for there are intangible factors at work, such as the desire to be free to travel, to write or do research, as well as merely financial considerations, operating to restrict the size of families of successful people; and there will remain the temptation to marry money, and with it bring low fertility into the family. All one can say is that such a measure, combined with similar measures such as free (and good) higher education for all, would undoubtedly help to check a process which, if left to itself, will inevitably cause the collapse of our civilization, and to give us a breathing space in which to look for other weapons to combat the unfamiliar menace.

Mr. Churchill, when Chancellor of the Exchequer a few years ago, in answer to a reasoned request for higher income-tax rebates for children, said that, while the aim of encouraging the professional classes to have more children was in every way praiseworthy, it had no connection with the Budget, whose only preoccupations were to finance the country. It is precisely such a point of view which needs changing. In the long run, the quantity and quality of the country's population is its basic economic asset. Chancellors of the Exchequer already consider the effect of their proposals upon trade; there is every reason for them to consider their effect upon racial stability and racial health.

IV

Finally there remains the question of what I have styled long-range eugenics—the attempt to alter the character of the human race out of its present mold,

to lead it on to new evolutionary achievements. We are sometimes told that the more likely fate for humanity is for it, like many another organic type, to pass its apogee and degenerate, owing to the rise of other forms of life; and claimants for the biological throne have been named, such as the rat or even, straying outside the vertebrate field, the ant or the termite. This prophecy we need not take too seriously. There is no likelihood of any other animal species becoming a biological rival to man. Man is unique among organisms in his power of speech and conceptual thought, which have resulted in his equally unique characteristics of an enduring and cumulative tradition and the power of making tools and machines. Thanks to these properties, he has entrenched himself over a wider range of the globe's surface than any other kind of animal, and is in a position of dominance which would appear to be quite impregnable so long as he continues to cultivate his distinctively human characteristics, the proper exercise of which will inevitably make for further progress. Nowhere is the dictum "unto him who hath shall be given" truer than in the spheres of competitive evolution; it is only when the progress of a given type is halted that others have the chance of ousting it.

Along these lines, the one possibility is that of *self-caused* degeneration of our species, leading to a collapse of the human domination which would then leave the door open for the rise of other forms of life. There are cases known in the paleontological history of life which can perhaps be best interpreted as a degeneration of the species due to some inherent decay of the germ-plasm, rather than to competition or changed conditions; but we need not appeal to these; for man is from the biological point of view very young; and no one acquainted with the evolu-

tionary time-scale could possibly accuse him of racial senility. If the human race is to bring about its own collapse, it will be because it has counteracted the effects of natural selection without attempting to put anything in its place, has allowed harmful mutations to accumulate instead of weeding them out or prevented them from appearing, and, in fine, has neglected eugenic measures.

The commonest objection to such constructive eugenic ideas is that we do not know enough about the subject to decide upon the most desirable direction in which to push forward, that the views of, say, clerics, medical men, politicians, men of science, artists, business men, and trades union leaders upon the most desirable type would be altogether at variance, and that in any case to entrust any body of men with the task of deciding who should be allowed to propagate and who should not would be to place too large and dangerous a power in their hands.

But this is to misrepresent the position. No eugenicist in his senses ever has suggested or ever would suggest that one particular type or standard should be picked out as desirable, and all other types discouraged or prevented from having children. Here biology joins hands with common sense. The dictum of common sense, crystallized into a proverb, is that "it takes all kinds to make a world." The evidence of biology, drawn from the facts of evolution, is that this dictum applies as much to different species and groups of animals and plants as to types within the one human species.

All ordinary people would agree that there are certain qualities which it is desirable for the race to possess. Among desirable qualities we should all put health and energy, physical and mental; special aptitudes, for music or mathematics, practical engineering or administrative genius, poetry or leader-

ship; all-round qualities, such as general ability, perseverance, manual dexterity, humor, adaptability; and do not let us forget beauty. It is possible and indeed probable that certain desirable qualities in an individual exclude others; in any case, no one in his senses would set out to breed a race of supermen who should all combine the good qualities of, say, Keats, Henry Ford, Buddha, Abraham Lincoln, Adonis, and Sir Isaac Newton. The task is a simpler one—to encourage the breeding of those with desirable qualities, even if they also possess defects in other qualities. It will be time enough after a thousand or ten thousand years of this to look into further questions such as the precise proportion of poets, physicists, and politicians required in a community, or the combination of a number of different desirable qualities in one human frame.

It is perfectly true that it is at the moment very difficult to envisage methods for putting even this limited constructive program into effect. But this is due as much to difficulties inherent in our present social-economic organization as to our ignorance of human heredity, and most of all to the absence of a eugenic sense in the public at large.

A change in public opinion is indeed the first requisite. Dean Inge, in a recent essay, asserted that once a man has grasped the implications of biology in respect of evolution and inheritance, eugenics becomes for him not merely an important aim, but the most sacred ideal of the human race as a race. It becomes not merely an outlet for human altruism, but the outlet which is

most comprehensive and of longest range of all outlets for altruism. It becomes, in fact, in Dean Inge's words, one of the supreme religious duties.

It is this attitude which we want to see grow and spread among civilized men and women, of every profession and of every class. Man has become what he is by a process of evolution which has taken perhaps a thousand million years; there is no reason why that evolution should not continue; and we can look forward, according to the astronomers, to at least another thousand million years of earth's habitability. If the past with its crude methods has taken life from single cells, or whatever simpler units it at first inhabited, to man, what may not man do in the future with the aid of conscious reason and deliberate planning?

Once that attitude has been assimilated, the idea of eugenics will take its proper place in our repertory of ideas. On its negative side it becomes racial preventive medicine; on its positive side, racial hope.

And once this is so, the pressure of public opinion to get something done will become so great that something *will* be done. More minds will be set to amass the necessary knowledge, more will be detailed to think out ways and means of applying knowledge. We cannot yet see what those discoveries will be, or envisage the organization of a eugenic society. But knowledge will slowly grow, ways and means can surely be found. And so man may take up his birthright, which is to become the first organism exercising conscious control over its own evolutionary destiny.