

THE DECADENCE OF HUMAN HEREDITY

BY S. J. HOLMES

I

IN any discussion of the possible decadence of the human stock it is necessary to distinguish clearly between progress in knowledge and institutions and progress in the congenital endowment of the race. It is quite obvious that within historic times improvement in the former has been out of all proportion to the development of the latter. Mankind, especially in the domains of western civilization, has come to regard progress as the natural if not necessary course of things. It is only recently that we have begun to realize that the rapid and impressive advances in civilization that have been made, by no means indicate an improvement in the innate qualities of human beings, and that these advances may even go along with race-deterioration.

Whether or not the hereditary endowment of the civilized races of man is undergoing a process of deterioration is a problem of the greatest possible moment. It is not a simple problem. It is not to be solved *a priori* on the basis of assumptions regarding the withdrawal of natural selection. It is a problem to be solved only by the accumulation of many data and by a knowledge of the factors at work in the modification of the hereditary forces among human peoples.

To obtain an insight into the factors of human evolution it is essential to have an accurate knowledge of the factors which are responsible for the evolution of the lower animals. On this

subject biologists are unfortunately by no means agreed. The factor of use-inheritance, upon which many biologists formerly laid so much stress, has rapidly lost adherents, and I think it must be conceded that if it is operative at all it is a factor of minor importance. Despite the modern criticisms of natural selection, with which I confess I have small sympathy, the doctrine of selection in one or another of its modifications stands to-day as the only naturalistic hypothesis which contains any principle of explanation of progressive adaptive evolution.

We have no reason to suppose that man, so far as the early stages of his biological evolution are concerned, is a result of the operation of any factors essentially different from those which have brought the lower animals up from the most primitive forms of life. At the present time we have no reasonable recourse from the conclusion that man owes his origin to selection, and that only by selection in some form can his congenital endowments be improved.

II

The evolution of human society and civilization has gradually brought mankind under conditions of existence which are so far different from those prevailing during the infancy of the race that the character of the stock can scarcely fail to be seriously modified. To judge from the remarkable superiority of the brain-power of man over that of the primates, the early periods

of human or the later stages of pre-human evolution must have been exceptionally favorable to the selection of individuals of superior mental endowment. So far as our vision can penetrate into the darkness of these times, mankind occupied itself quite largely in the destructive, but eugenically wholesome, occupation of fighting, — fighting not only with large beasts of the field, but also — and this is probably much more important from the standpoint of evolution — with other clans and tribes of the human species.

The advent of man is the expression of the superiority of brains over brute force in the struggle for life. While we may never recover the history of the period between the primates and primitive man, what we know of the general factors of evolution justifies us in the conjecture that it was a period of intense struggle, with a lively elimination of the unfit.

The course of human history as far back as we can follow it is one of warfare of tribe with tribe, and nation with nation, the conquerors of one age being overcome by new invaders of another lineage in the next. Along with this perpetual conflict, and to a considerable degree because of it, man has not only increased greatly in intelligence, but has developed those attributes of courage, reliability, loyalty, and mutual helpfulness which make for social solidarity and corporate efficiency. Gruesome as the struggle for existence may be to contemplate, and fraught as it has been with pain and sorrow, it is a process to which the race is largely indebted for its congenital improvement. It may be that it is an unfortunate method of bringing highly endowed creatures into the world, but it is Nature's way. And Nature is quite indifferent as to whether we approve it or not. What Nature is interested in, to speak figu-

ratively, is success in the struggle for existence. There is no evidence that she cares a fig for progress; only so far as progress increases the chances of survival, is it any of Nature's concern. And at any time she is perfectly ready to undo all her work, and to reduce a highly complex organism to the most degenerate of creatures, whenever the conditions favor simplicity of organization. Degeneration from a highly evolved state has occurred time after time in the course of evolution, and the possession of a complex organization is not the slightest guaranty of further improvement, or even of a secure hold on the position that has been attained.

There are many forces in human society which make for degeneration, and our safety lies in clearly recognizing them. Only recently is the civilized world becoming awakened to the deleterious influence of modern warfare. Dr. D. S. Jordan, in his addresses on the 'Blood of the Nation,' and the 'Human Harvest,' has set forth in a clear and forcible manner the sad havoc which war has played in eliminating the best of the human breed. In times of conflict, the men of manly vigor, brains, and courage go to the front to die by thousands in the cause of national defense. The weak, the cowardly, the mercenary, the degenerate, remain behind, to multiply. The loss to any nation resulting from the continual draining away of its best blood can scarcely fail to weaken it, until it may eventually fall a prey to the encroachments of its neighbors. Jordan, following several historians of note, attributes the downfall of Greece and Rome, the gradual decay of Spain and other nations, largely to this reversal of selection. Whether or not this is the principal cause of decadence in the instances cited, it is very probable that the continual sapping of strength consequent upon the sacrifice of hundreds

of thousands of their best men has been a powerful influence in undermining the physical and mental heredity of these nations.

While modern civilized warfare is one of the most potent agencies for the elimination of the best blood and the propagation of weaklings, there can be little doubt that this influence of war is limited to comparatively recent times. It is because warfare has become civilized that, eugenically considered, it is such a powerful influence for race-deterioration. Early struggles were wars of extermination in which the unfit had little chance. The Polynesians commonly massacred all of the conquered tribe, including men, women, and children. The same practice was common among the primitive Australians, the natives of New Guinea and New Zealand. The Kaffirs and many other African tribes exterminated completely the peoples whom they conquered; and among many tribes of North American Indians such wars of extermination were frequent. Wars of extermination among the more civilized Egyptians, Persians, and Hebrews were by no means rare. Of the Amorites, whom Jehovah delivered into the hands of his chosen people, it is said in Deuteronomy, 'And we took all his cities at that time . . . utterly destroying the men, women, and children of every city. But all the cattle and the spoil of the cities, we took for a prey to ourselves.' And in the campaigns of Joshua it was the rule that the men, women, and children of the conquered cities should all be put to the sword.

When complete extermination was not practiced, the vanquished were commonly enslaved, or subjected to such conditions that they languished or eventually died out, the Hebrew people forming a luminous exception to the rule in their persistence through the vicissitudes of conquest, practical

enslavement, and all kinds of subsequent persecution. In the conflict among primitive societies not only was the best-endowed individual most apt to survive in the hand-to-hand encounters which were then in vogue, but the groups in which strength, intelligence, organization, and mutual service were most highly developed, would easily triumph over groups with less individual efficiency or social coherence. The population was replenished by the most efficient members of society instead of the weaklings, so that the influence of primitive conflict stands diametrically opposed to the effect of modern civilized warfare upon the hereditary endowment of the race.

III

But apart from conflict, the weak in barbaric times had little chance to perpetuate their defects. Where exogamy prevailed, a man had to be able to capture a wife or go without one, and in many tribes wives were only to be won after a trial of strength or skill. Among the Chippewa Indians, says Richardson, 'any one may challenge another to wrestle, and if he overcomes, may carry off his wife as a prize. The bereaved husband meets his loss with resignation, which custom prescribes in such a case, and seeks his revenge by taking the wife of another man weaker than himself.'

Among many primitive peoples it was customary to eliminate epileptics, idiots, lunatics, and persons afflicted with incurable ills; and the practice of putting to death weak, deformed, and sickly children was extremely prevalent. The custom among the Spartans of raising only their stronger children will occur to every one; even Aristotle advocates the rule that nothing imperfect or maimed shall be brought up. And Plato, who elaborated the most

rigid eugenic programme ever devised, recommends that the children of the more depraved, and such others as are in any way imperfect, be hidden away in some secret and obscure place.

Eugenics is by no means a modern science. Primitive peoples took it much more seriously and practiced it more consistently than we do to-day. There can be no manner of doubt that the weak, the deformed, the foolish, the insane and degenerate of all kinds, have a much greater opportunity to survive and propagate their defects than they commonly had among primitive peoples.

It is scarcely necessary to dwell upon the greatly reduced influence of natural selection that has been brought about by the advance of medicine and surgery and the knowledge of how to check and control many epidemics that formerly decimated the human race. Defects of eyesight, hearing, and many other qualities, no longer entail the extinction of their possessors. Natural selection still operates on the human species, and will always continue to do so, but our medical skill and our fostering of the weak greatly reduce its potency.

When we compare the various present influences tending to improve the human breed with those operative in past times, the prospect seems rather gloomy for the future of the human family. We no longer have the elimination of the weak through tribal strife, but in its place the highly deleterious influence of modern war, which has not only worked incalculable injury in recent centuries, but probably has more evil in store for us. We no longer leave the weak and imperfect infants to perish, but do everything in our power to rear them, and then give them full liberty to perpetuate their defects. Except during their period of actual confinement in asylums, no restriction

is generally placed on the multiplication of the insane. With sixteen exceptions, there are no states in the union which forbid the marriage of the feeble-minded, and while other states regard such marriages as void, there is no penalty incurred either by the contracting parties or by the person who solemnizes the union, and consequently matings among the feeble-minded are of common occurrence. In only fifteen states is there any prohibition upon the marriage of the insane. Only in Indiana and in Washington is there any restriction placed upon the marriage of confirmed criminals. There are few creatures so degenerate but that most of the states of our enlightened country give them full sanction to perpetuate their impure stock, and the conditions in most European countries in this respect are considerably worse than in the United States. Through ignorance, indifference, false ideas concerning 'personal liberty,' and the absorption of legislators in matters of more immediate political expediency, we are permitting the accumulation of a vicious and defective heredity which would not be tolerated among most primitive peoples.

IV

This disappearance of most of the eugenic influences operative in the early history of mankind is not the worst danger, bad as it is, that besets us. Society, as at present organized, tends to withdraw its best blood from contributing its share to the heritage of the next generation. While it is unjustifiable to estimate the eugenic worth of a family in terms of wealth or social position, and while what are called the lower ranks of society often contain its best blood, the classes that have become distinguished through their culture or their achievements

certainly have a hereditary endowment considerably above the average. Pearson has shown that mental ability is inherited to about the same degree as various physical characteristics. This fact combined with the important conclusion, also established by Pearson, that less than twenty-five per cent of the married couples, or from one sixth to one eighth of the total population, produce over fifty per cent of the next generation, shows how very important it is that this one sixth or one eighth should be drawn from the better element of society. If the population is recruited even a little more from the less desirable individuals in each generation, it will not take many generations for the bad stock to replace the good.

It is a well-known fact that the educated classes, represented by such professions as lawyers, clergymen, doctors, and professors, as a rule marry late and produce few children, whereas the feeble-minded, the shiftless, and the imprudent usually have a birth-rate far above the average. Graduates from our colleges and universities have as a general rule scarcely enough children to perpetuate their families. The average number of children of the graduates of Harvard is less than two, and the record of Yale is no better than this. The showing of various other colleges and universities is but little better.

Judging from the statistics available on the subject, education is proving a formidable obstacle to eugenic progress. The one redeeming feature about it is that as students are sent to colleges and universities in ever-increasing proportions to the population, those who are selected for higher education are coming to be less representative of the best brains of the country. It is a common opinion that the general quality of our undergraduates is deteriorating, but if this be true the rea-

sons may be found in various influences other than eugenic factors.

Still, the fact that the college communities include so many of the offspring of people of exceptional talent and achievement is a circumstance that is continually depriving the race of its best blood. There can be no doubt that under our present régime the more intellectual families are rapidly disappearing. It is from mediocrity and from the levels below mediocrity that the population is replenished. The danger of degeneration from this fact is all the greater because the evil is insidious and unobtrusive. If society could be brought to realize how enormous may be the loss entailed by the gradual extinction of those families which furnish the intellectual leaders of the race, it would bestir itself with a great deal more vigor to provide a remedy for the situation.

Society may accomplish much by checking the multiplication of the feeble-minded, the criminals, and the insane; but how to keep from being swallowed up in the fecundity of mediocrity is a much more difficult problem. We can get along with a small percentage of the mentally and morally defective much better than we can afford to lose the priceless blood that gives us our great men.

v

I have indicated some of the causes which, so far as can be judged, have been and are making for the deterioration of the race. It may be asked, however: Is it known as a matter of fact that the race is deteriorating? Can it be proved by statistics that the race is really on the down grade?

At the present time it must be admitted that the actual statistical proof of race-deterioration is very incomplete. We simply do not have the sta-

tistics to show whether our inheritance has improved or deteriorated. But from our knowledge of the evolutionary factors at work in human society it is scarcely possible to avoid the conclusion that a certain amount of decadence is inevitable. We know that mental and moral defects are inherited; we know that the stocks with a record of intellectual achievement are multiplying with relative and increasing slowness; we know that the physically and mentally unfit reproduce more rapidly than under the conditions of more primitive civilization, and that their progeny are fostered and allowed to continue their defects. Amid all the influences tending to lessen the fertility of the more desirable classes of human beings there is scarcely any factor, beyond a relatively feeble remnant of natural selection, which is working for the perpetuation of the best blood.

With our present statistics it is difficult to disentangle the effects of environment from the effects of a vitiated inheritance. In the United States there has been during several decades a general increase in crime. How much this is to be attributed to immigration and changed environmental conditions it is impossible to say. Crime in Europe is also on the increase, but here again we cannot estimate the relative rôles of hereditary and environmental factors. It is the same with insanity. During the thirteen years before 1903 the insane in institutions in the United States increased 100 per cent, while the population as a whole increased 30 per cent. Since 1859 the insane in England and Wales have increased over 230 per cent while the general population has increased 77 per cent. Of these insane, 47,000, over one third, were married.

This increase, which may be paralleled by statistics from other countries, may be due in part to the fact that a

relatively larger part of the insane are put into asylums; it may be due in part to changed conditions of social and economic life; but our rapidly accumulating knowledge of the heredity of insanity makes it probable — and we can only say probable — that much of it is due to an increase of hereditary defects. That our knowledge of the subject is just emerging from a chaotic state is evinced by the statement of Kraepelin, one of the very highest authorities, in the seventh edition of his *Psychiatrie*, that 'we must regard the statistics of heredity in insanity merely as facts of experience without finding in them the expression of a law which should hold in every case.' In the past few years certain forms of insanity have been found to follow a very definite law in their hereditary transmission. Through the careful investigation of a number of family records in England and in America it has been established that insanity is frequently inherited in Mendelian fashion, and that where there are no insane among the near relatives of the afflicted person, there are usually neuropathic tendencies which manifest themselves in nervous disorders. When neuropathic mates with neuropathic the result is a fearful harvest of neuropathic offspring.

The studies of Goddard on the heredity of feeble-mindedness, — and feeble-mindedness is on the increase in England and America, — and those of Davenport and Weeks on the inheritance of epilepsy, have shown that the same kind of transmission prevails in these cases. Dr. Wilmarth, on the basis of his observations of families of the feeble-minded, estimates 'that at least two thirds of the feeble-minded have defective relations.'

It is possible to object that the increase in insanity and feeble-mindedness during recent decades may not

mean increasing pollution of human blood; but since the traits mentioned are so strongly inherited, and those possessing them are allowed to multiply with so little restriction, it seems very probable that we are having a gradual accumulation of a vitiated heredity. Whether the hereditary defectives are increasing or not, we do not want them; and the duty of society to

check their multiplication by all safe and humane means is perfectly plain.

In order to estimate the probable trend of human evolution it may be instructive to represent in tabular form the various influences tending to modify our racial inheritance at the present time as compared with those affecting mankind in the earlier stages of its evolution.

PRIMITIVE MAN

Natural Selection, actively operating.
Sexual Selection, frequently working for race-improvement.
Elimination of defectives.
War tending to the multiplication of the best stock.
Relative fecundity of best endowed.

CIVILIZED MAN

Natural Selection, reduced in intensity.
Sexual Selection, of doubtful eugenic value.
Preservation of defectives.
War tending to elimination of the best stock.
Relative sterility of best endowed.

All along the line the eugenic factors were more potent in primitive than in civilized man. Not only are the forces working for race-improvement becoming weaker as civilization advances, but as a result of civilization there have arisen tendencies which operate strongly against the weakened forces of eugenic progress. About all we have left to counteract these untoward agencies is a very uncertain measure of sexual selection and the remnant of natural selection which medical science has not succeeded in disposing of.

What it is feasible to do to remedy this unfortunate situation is one of the most important of the problems that confront the human race. My aim in the present article, however, is diag-

nosis rather than the prescription of remedies. Nevertheless, I cannot refrain from pointing out that there is one measure, the prevention of the multiplication of the defective classes, which is so obvious a duty and so feasible a project that the continuation of our present *laissez-faire* policy is nothing short of a crime to society. The removal of the pollution of human inheritance that comes from the worst one or two per cent of its stock would, in a few generations, go a very long way toward reducing the numbers in our insane asylums, poorhouses, and jails. This much in the way of eugenic reform can easily be accomplished. The other aspects of the problem are matters for further reflection.

OKHOY BABU'S ADVENTURE

BY CHARLES JOHNSTON

I

'YOUR HONOR!' Okhoy Babu interrupted, with that oily smile of his, 'I request an adjournment of the court, if your Honor pleases! I have just heard of important new evidence in this case!'

Indranath Babu, my chief clerk, began to frown and cluck with his tongue. He was long-nosed and very dark, with a face like a wise bird; a fine fellow for all his ugliness, and to be trusted. He had that trick of clucking, like an offended wren, when things were going awry, and I had learned to watch for it.

So Indranath Babu clucked and frowned, and Okhoy Babu stood expectant, with his fat smile that was at once servile and cynical. I did not like Okhoy Babu, but that was hardly a ground for refusing an adjournment.

It was one of those bloodthirsty boundary disputes that every now and then come in from the outlying villages. Hari Dass and Kishto Dass had fallen out about a field and had clubbed each other so vigorously with bamboos that I had been called out at two in the morning to take their dying depositions; Oshotosh Babu, the subdivisional surgeon, meanwhile stirring them up with strong spirits of ammonia. They were not yet dead, however, and might pull through, so the police and I had gathered in an armful of their club-men, and I was trying to get at the rights of the story in my dingy little court.

I was tired, after a long and irritat-

ing morning which had included a verification of the subdivisional stock of stamps — soaked together into slabs during the rains — and the dispensing of enough opium and hashish to demoralize a city. Further, it was tiffin time. So I ignored the clucking of Indranath Babu, in spite of ripe experience.

'How long do you want, Babu?'

'I shall be ready to go on later in the afternoon, your Honor! An hour or two, not more!'

'Three o'clock?'

'Very good, your Honor!'

So the court adjourned and went to tiffin, while Indranath Babu frowned and gathered up the papers of the case.

I inhabited a funny little Board-of-Works bungalow close to the courthouse, and lunched in the half-darkness of the central room to escape the midday glare. Poonaswamy of the crimson turban fed me indifferent well on local *moorghee*, — which is to say, chicken, — with curried rice and vegetables from the bazaar. That was according to precedent. But Okhoy Babu added a diversion.

With a dashing carelessness I would not have believed him capable of, he came across the grass with a troop of witnesses and squatted down under a tree not twenty yards off in a ring of purple shade, and began one of those little rehearsals which do so much for an effective case in court.

It was rather like an open-air Sunday-school, Okhoy Babu reciting, and his witnesses repeating in chorus — that came to me as a murmur across the