

STUDIES in MENTAL INEFFICIENCY

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Natural Inheritance and Social Policy.

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WHEN investigating any subject, the student of science should not hesitate long before endeavouring to frame some theory or general law by means of which all the facts known to him would be brought into harmonious relationship with each other. Such a provisional theory having been suggested, exceptional facts or out of the way occurrences will be of especial value in testing it; for either, being valid, it will be found to fit in with all new material as it comes to hand, or it must be modified to make it do so. The student of medicine is also, though for different reasons, especially interested in rare and previously unseen types of disease; for, in his ordinary practice, he knows that he may at any time have to advise on such cases. Medical men and men of science, in consequence, acquire the habit of attaching great importance to all that may be found in the dark and unexplored corners of their fields of investigation; and they are doubtless right in so doing. But when previously acquired knowledge has to be utilized in deciding broad questions concerning social policy, this attitude of mind is likely to be misleading. According to a well-known adage, hard cases make bad law; and, in like manner, exceptional facts should often be neglected when considering how mankind can be most effectively benefited. Exceptions are often difficult to recognise, even though they may be known to exist; and to endeavour to recognise them all would often put an end to all social progress. Moreover, laws which are framed so as to be applicable to all alike are apt, in consequence, to command more general respect than when certain individuals are exempted from their operations. Of course, exceptions or minorities must often be considered; but it is, nevertheless, a common mistake to pay too much attention to them.

This conclusion, namely, that in social questions we ought to look mainly,

but not exclusively, to the effect of any proposed reform on the bulk of the population concerned, is as true when dealing with natural inheritance as with any other factor which has to be held in view in legislation. We ought, therefore, to pay especial attention to the broadest generalizations which can be deduced from our knowledge of the way in which natural or inborn qualities are transmitted from one generation to another. This knowledge has been acquired in two somewhat separate fields of research, which may be described as the statistical and the Mendelian; to these being added the time-honoured beliefs of the breeders of animals. In the statistical field we have learnt that offspring are *on the average* about half as near to the mean in regard to the measurement of most of their natural qualities, their height for example, as were their parents; and that similar numerical relationships exist between the average qualities of different groups according to the degrees of their blood relationships. In the Mendelian field individuals, rather than averages, have been investigated, with the result that it is now known that in regard to every natural quality, something is derived from each parent in accordance with laws which are becoming more and more accurately ascertained. At one time it seemed as if there were a certain antagonism between the results obtained in these two fields of enquiry; but lately it has been shown that the statistical results, dealing with averages, are closely in accordance with what we should theoretically expect to find when qualities are dependent on many Mendelian factors. The Mendelian conclusions have, moreover, been greatly strengthened in recent years by the microscopical examination of the processes of reproduction, which are found in many respects to run closely parallel to Mendel's theoretical deductions. Finally, all that the breeders of animals have known for so long is confirmed in broad outline by modern science. Now those who have studied with care all this mass of learning and experience gain an indelible idea of the power of natural inheritance and of the inevitability of the laws by which that power is directed, and the broadest lesson to be learnt by social reformers, in connection with natural inheritance, is the recognition of its inevitability.

The doctrine that the laws which govern natural inheritance are immutable is often strongly resented, a resentment which is in great measure due to a misunderstanding of the truth thus intended to be conveyed. All who have had even an elementary mathematical education know that any two forces, although they may be studied quite separately, may nevertheless be represented or replaced by a single force acting in the direction of their resultant. If the strength of one of these forces were to be increased, no doubt the direction of their resultant would, in consequence, be somewhat altered, even though the other force continued to act as before. What is now needed by the public is what may be described as a lesson in elementary social statics, by means of which it would become evident to all that a grown man is the resultant of two great forces, his natural inheritance and his environment, each of which may be separately studied. The natural start which our neighbours received at birth cannot now be altered; but this unalterable factor can never prevent us from having innumerable opportunities of benefiting the present generation by attending to the other great factor, that is, to the mental and physical environment of our fellow citizens. When looking to the more distant future, natural inheritance must not, however, be regarded as an immutable factor, and the science of genetics opens out before our eyes new hopes of human betterment by showing us how this other factor also may slowly be improved.

Another reason why modern scientific views in regard to heredity are not

readily accepted by the public is the failure to perceive how simple are some of the fundamental conceptions on which science is built. All the lessons which science teaches us in regard to practical affairs are dependent on past experiences and are founded on the belief that such experiences are the best and indeed the only guide we have in regard to our conduct in the future. A natural law means little more than a statement of what has happened in the past and what will, therefore, occur in like circumstances in the future. We know, for example, that whenever the children of two feebleminded parents have been examined, they themselves have practically always been found to be mentally defective; and we may, if we like, declare it to be a 'law' that if we allow such unions to take place, the chances will be several hundred to one that every child born in consequence will be either feeble-minded or otherwise mentally defective. Again, our experiences in the past indicate that if the family histories of mentally defective children are examined, it will be found that over 80% are descended from a pronounced neuropathic stock, including cases of insanity, epilepsy, paralysis, etc.)* Moreover, the more carefully these pedigrees are studied the greater becomes the percentages of cases in which natural inheritance must be regarded as being one of the causative factors. From past experiences we may, therefore, fairly conclude that at least 80 per cent. of aments "are the products of a defective germ plasm." Accepting this as a fact, we may declare it to be a 'law' that if parenthood be permitted in the case of a mentally defective person, and if a family tree will thus, as it were, be created which will spread out in the future to the same extent to which the investigated pedigrees spread out into the past, it also will be found in at least four cases out of five to be of pronounced neuropathic stock and to contain an excessive proportion of mentally defective, insane, epileptic, and paralytic persons. This is the simple broad conclusion on which should be based our social policy in so far as affected by the inheritance of mental defect, the twenty per cent. or so of cases in which a normal stock might thus perhaps be created not being allowed to stand in our way.

In many cases the defective germ plasm should no doubt be regarded as merely being a contributory factor which, had the surrounding conditions been perfect, would alone have been insufficient to have produced certifiable mental defect. But here we see the importance of recognizing that we are dealing with the resultant of two independent factors, the hereditary and the environmental, and that each of these factors would be capable of exerting an influence of some kind whatever might be the influence exerted by the other. Every effort should unquestionably be made now and in future to rid the world of all harmful environmental factors tending to make mental defect more probably in the individuals affected or in their offspring, these probably including accidents to and infectious diseases of the mother or child, drunkenness, and bad feeding; for in this way, besides many other obvious benefits, the amount of mental defect in this generation and in the future would be somewhat diminished. It ought to be acknowledged, however, that by eliminating these contributory causes of mental defect, we should be doing nothing whatever towards ridding the world of this inferior neuropathic stock, a stock certain always to be the cause of much human misery. Indeed these beneficial improvements to human environment would tend to somewhat increase this heritage of evil; for such reforms would result in a certain number of otherwise mentally defective persons becoming *apparently* normal and therefore more likely to marry. Philanthropists should be amongst the first to search for any means of

* Mental Deficiency. Tredgold. 3rd Edit., pages 41 and 91.

obviating the harmful effects which must inevitably, in a measure, tend to accompany their splendid work.

Although "mental defect is but rarely caused by injurious external factors acting alone;" yet, in a considerable minority of cases, environmental influences are held to be the sole cause of feeble-mindedness.* As to mental defectives of this type, whose malady is in no way due to a defective germ plasm, to assert that there would be no reason to anticipate that their offspring would be abnormal would, however, be by no means equivalent to asserting that procreation would be quite unobjectionable in their case. Surely all must admit that there is no element of human surroundings of greater importance to a child than the character and qualities of its parents, and that to be brought up by a feeble-minded person is a serious disadvantage. Moreover these harmful environmental influences are in a measure contagious, their effects not being confined to the family primarily affected; from which it follows that, even if natural inheritance counted for nothing, the higher the average mental capacity of parents, the better it would be for the nation as a whole. It may perhaps be urged that the harm done by permitting parenthood in the non-hereditary cases of mental defect would be entirely obviated by all children being taken away from their homes in such cases; a plea which, however, cannot be admitted for several reasons. In the first place no other person can fully supply the place of the natural parent. Then again, there exists a close relationship between infantile birth and death rates, and the removal of children from their homes not only increases the number of births in such homes, but also results in some children surviving who would otherwise die in infancy. It follows that to permit parenthood in the case of the feeble in mind when such cases are judged not to be hereditary, whilst removing some but not all of the children from such homes, would result in an increase in the number of persons either brought up by a feeble-minded parent or being without the advantages of parental care. Lastly it would inevitably happen that by mistake some individuals with a natural neuropathic endowment would be included amongst the entirely non-hereditary cases, with the result that such a bearding out policy would cause some increase in the number of mentally defective persons in the coming generations. The only safe rule to adopt is to prohibit parenthood in all cases of feeble-mindedness, to whatever origin the malady may be assigned.

"The first duty of medicine is not to cure disease, but to prevent it," and "if we are to grow a sound and healthy race of men we must begin, where all true breeding begins, at the source."† This being the case, we are certainly driven to enquire into the ultimate causes of mental defect, a subject on which we are as yet very ignorant. When the struggle for existence was in full operation, that is in bygone ages when man lived like a wild animal, amentia of all kinds was doubtless being comparatively quickly stamped out. It does not seem probable, therefore, that existing germinal defects of this kind can be traced back to any period of remote antiquity. Adverse influences must have been at work in historic times; and, according to Dr. Tredgold, the chief of these influences "would appear to be chronic alcoholism, tuberculosis, syphilis, and the hurry and scurry, with their attendant stress, excess and dissipation of modern life."‡ Assuming this to be the case, would our knowledge that these were in fact the ultimate causes of amentia materially affect our policy in regard to it? I think

*Mental Deficiency. Tredgold. P. 23.

†An outline of the Practice of Preventive Medicine. Sir G. Newman. Stationery Office. 1919. Pp. 5 and 46.

‡Mental Deficiency. Tredgold. Pp. 502.

not, for the following reasons. In the first place, we have seen that in over four cases out of five, the feeble-minded child is descended from a pronounced neuropathic stock; and it is therefore fair to assume that in less than one-fifth of the cases of mental defect could the evil have been entirely due to something which occurred in the preceding generation. In a large majority of the cases in which the feeble in mind are allowed to become parents, the abolition of these injurious influences could not, therefore, wipe out the harm thus done to posterity; and it is to the majority that our attention should be mainly directed. Doubtless to abolish the final causes of hereditary amentia would ultimately confer an enormous benefit on posterity by continually but slowly lessening the amount of mental defect as the generations succeeded each other. But as regards these alleged causes, efforts are now being made to remove every one of them; and the hands of those engaged in this good fight could be but little strengthened by the assertion that they were thus *probably* helping to lessen mental defect amongst future generations. Indeed a cause is generally weakened rather than strengthened by the introduction of disputable arguments in its favour; and certain authorities still hold that the causes of amentia are disputable. Dr. Goddard, the leading American expert, for example, declares that he is compelled to admit that it cannot be proved that alcohol was an ultimate cause of the cases of feeble-mindedness examined by him, and that "everything seems to indicate that alcoholism itself is only a symptom" of the presence of neuropathic hereditary defect.* Again, as regards syphilis, the same authority considers that of all the alleged causes of feeble-mindedness, "there is none for which there is less evidence."† But even if we are, as I am inclined to believe, still groping our way in the dark in our search for the ultimate causes of amentia, yet our ignorance on this point affords no excuse whatever for not striving to rid the world of the evils which will arise in the future from the damage already done to the human germ plasm, be the ultimate causes of that damage what they may.‡

Even as regards the cases of feeble-mindedness which are admittedly derived from a neuropathic stock, education and physical care have been advocated, not only for the sake of the individuals themselves, but also to prevent this defect from being passed on to posterity. No doubt a considerable amount of expenditure in this direction is justifiable, both on account of its economic consequences and because of increase in the happiness of this unfortunate class which is thus obtainable; but the belief that the innate tendency to amentia could be materially lessened in the course of a few generations by great care always being taken of mental defectives is unsupported by any direct evidence and is in opposition to the opinions of all the leading scientific experts. The students of genetics have, it is true, become less dogmatic in recent years in their denials of the possibility of environmental effects being inherited; but none of them hold out any hopes that the effects on the inborn qualities of succeeding generations resulting from the education of their ancestry would be appreciable for centuries. And here again it must be remembered by the admirable band of workers in this field that to make the feeble in mind either more capable of self-support or appear more normal may tend to make them more likely to marry and thus may increase the amount of

*Goddard. Feeble-mindedness, its causes and consequences. Pages 479 and 492.

† Ibid, p. 518.

‡ If some cause of amentia producing no immediate harm were to be discovered its recognition would be of great importance. That this is possible can hardly be denied, seeing that in Stockhard's famous experiments, the alcoholised parent guinea pigs were in no way visibly injured, whilst deformities appeared for many generations amongst their sober offspring.

mental defect in future generations. The advocates of kind treatment for all aments should be the first to join in the eugenic campaign against this evil.

How then is hereditary mental defect to be lessened in the coming generations? As regards existing neuropathic stock, that is, as regards the bulk of mental defect, this can only be accomplished by the prevention of parenthood amongst those likely to transmit this evil heritage to posterity. And how is this to be done? On this point I must be brief and therefore dogmatic, both because of the space available and because many of my readers are better equipped than myself to answer this question. In fact I can do little more than state my own conclusions without comment.

As regards the feeble-in-mind, the only class of aments in which the question of parenthood practically arises, segregation, or confinement in comfort with the sexes kept apart, is the plan universally advocated by those having the widest experience in these questions, whether looking to immediate or to future results. It is both kind and effective; and, in view of enormous cost which would fall on posterity if the feeble-in-mind were allowed to propagate freely, it is undoubtedly economic in the long run. It will, however, probably be long before either parents and guardians or the government will recognise these facts; the necessary accommodation will not be forthcoming for years; and unreasonable objections will continue to be raised against the removal from home of mentally defective relatives. For all these reasons large numbers of the feeble-in-mind will probably for long have to be boarded out or allowed to remain at home, even when segregation would be far the preferable course. Many experts appear to consider that it will not be difficult to decide in which cases adequate precautions against procreation can be taken and will be taken; and as my own unaided judgment would lead me to view this confidence with the gravest doubts, I can only hope that here I am in error. On this point I must, however, remind myself of the principle which I have been advocating, namely, that exceptions to a rule must not be allowed to carry too much weight; and, this being the case, a boarding-out system ought not to be condemned should it result in a very small proportion of illegitimate births. Nevertheless it appears to me that sterilization ought now to be adopted as a voluntary measure; that is to say that, when guardians voluntarily allow their wards to be sterilized, that fact should be taken into consideration by the authorities when deciding whether or not segregation should be enforced. Though sterilization is now a very simple process, and may become even more simple in future, yet the ill-founded prejudice against it is still very strong; and it is certainly no use pressing for the immediate adoption of a reform whilst public opinion remains definitely hostile. I must, however, record my opinion that if racial deterioration is to be prevented, sterilization will have to be employed sooner or later.

In conclusion, let me plead for the recognition of the fact that as to the complete prevention of parenthood amongst the feeble-in-mind, immensely valuable as would be that measure, it yet might take a period of time only to be estimated in centuries thus to rid the world of all the relics of the existing neuropathic stock, with its inevitable accompaniments of crime, drunkenness, prostitution, poverty and ill-treatment. If this be so, should we not seek to ascertain in what cases parenthood ought to be discouraged or prohibited in the case of the apparently normal members of families which are evidently badly endowed by nature? To act effectively in this direction, more knowledge than we possess is needed, and further research in regard to the pedigrees of neuropathic stock is much to be desired, a field in which lamentably little is being done in this country. There

are, moreover, even wider questions in connection with heredity which must be investigated. For instance, can we rest satisfied with the results of the mental examination of the American recruits, results which indicate that ten per cent. of that great nation are destined never to advance in natural intelligence beyond the 'mental age' of ten years?* Here is a vast field for research. What is the relative fertility of these different mental age groups? To what extent is innate intelligence hereditary? Do the ascertained facts indicate that feeble-mindedness is an excessive form of a common defect, or is it a disease apart? What are the average 'mental ages' of normal members of neuropathic stocks of different types? If England is to do little to solve these vastly important problems, let us hope that America will continue to be more active.

Our existing knowledge is, however, amply sufficient to keep us busy for some time to come. No doubt those who wish to oppose all racial progress cannot do better than continually to emphasize the fact that there are exceptions to almost every rule, and that to follow any general plan must generally involve dealing erroneously with a minority of cases. To plead ignorance is a most effective method of obstruction!

Classes for Dull and Backward Children.†

BY MISS K. L. MARSDEN. *Inspectress of Infant Schools, City of Nottingham Education Committee.*

To all who are dealing with the problem of the Dull and Backward Child the recently published Report of the Medical Officer of the Board of Education will afford some interesting reading.

In the December issue of the *Journal of Education* you may have noticed the following paragraph.

"Another problem dealt with by the Board's Medical Officer which we select for special comment is that of the dull and backward child, familiar to the organisation of an elementary school as the child who does not march stage by stage in normal progress through the school. Omitting cases of such slight retardation as fall within the range of 'standard deviation' for the particular age, we are still left with about 10 per cent. of the older children classed as definitely backward. About two-fifths of these cases are due to such non-mental factors as irregular attendance, inefficient teaching in earlier years, and physical defect. The remaining three-fifths are due to apparently inborn mental factors. In some cases special classes, with liberal substitutes of manual training in place of the ordinary subjects of the curriculum are provided. The report points out, however, that manual work is not a panacea for backwardness. There is great need for schooling under the best health conditions—open air work, adequate feeding, exercise and rest, and for the proper understanding of the mentally weak child. In connection with the latter requirements there is abundant room for expert research. In one way it seems absurd to spend money so freely on the backward child; but, until

* Standing alone such statements as these may be very misleading, for it is only "intelligence" which is in question, and reference must be made to original works before the meaning intended to be conveyed can be fully understood. See, for example, *Human Efficiency and Levels of Intelligence*. Goddard, 1920, Oxford Univ. Press.

† Paper read at the Tenth Annual Conference of Educational Associations, 1922, University College, London.