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MENTAL DEFECT AND ITS IMPORTANCE TO THE COMMUNITY.

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(A Fellowship of Medicine Post-Graduate Lecture.)

AT an early stage of my medical career, when I was house surgeon in the Royal Infirmary, Edinburgh, I found myself unexpectedly confronted with the problem of mental defect. One evening we admitted a boy, aged 10, who had sustained a simple fracture of the leg. This was treated in the

orthodox manner and the boy apparently settled comfortably for the night. At 4 a.m. the next morning I was hurriedly sent for as the nurse had found the boy with all the clothes off his bed and all the splints and bandages off his leg, and the simple fracture converted into a compound one. Investigation showed that the boy was feeble-minded, a condition previously overlooked; he was therefore incapable of behaving as satisfactorily as an ordinary child of the same age. A few weeks later we admitted to the wards another boy, aged 12, with a history of having swallowed twenty-seven hobnails, a staple and a portion of a metal plate, while he was working in the shoemaker's shop at an industrial school. The inventory of the articles swallowed was confirmed by what was passed per rectum later. Investigation

into his history showed that he also was a feeble-minded boy, who ought to have been in an institution for defectives and not working side by side with boys of average mental capacity. My previous experience in the Yorkshire East Riding Mental Hospital made me take special interest in these cases. When I moved on to be resident physician at the Children's Hospital, I found there among the children in the wards sufficient material for making a study of mental defect.

The experience so gained was valuable when I first started in practice, because I had to act as honorary medical officer to a rescue home for girls. Studying the inmates with the help of an understanding and sympathetic matron, I found that 30 per cent. were feeble-minded. I subsequently published an account of these cases; the percentage of defectives found there has since been confirmed by several other medical investigators. At any stage of your career you may be confronted with a feeble-minded person, who ought to be diagnosed as such.

What do we mean by calling these cases feeble-minded? We mean that their mentality is so far subnormal that they require care, supervision and control for their own protection or for the protection of others. Such unfortunate persons exist in sufficient numbers to be found almost anywhere, but the most suitable places for studying them are in rescue homes, and workhouse maternity wards; in prison, where from 2 to 5 per cent. are found to be defective, while in workhouses 30 per cent. of the whole inmates are often mentally defective.

In order that you may understand this type of case I will tell you of an unfortunate young woman, born in Birmingham twenty-four years ago. She passed through an ordinary school, and subsequently had several situations, none of which she kept any length of time. Nothing was done to investigate the cause of her failure till she was reported to the statutory committee

for mental defect, as having an illegitimate child born in the workhouse, and appearing incapable of looking after the child or herself. She was kept under observation for a time, but then disappeared. Later on she was found in prison. The prison medical officer hesitated to certify her as mentally defective at first, because her conduct in prison, as often happens in such cases, since life there is simple, showed nothing abnormal. After her whole record had been put before him he did not hesitate to do so. The full report obtained from the police showed that during the preceding four and a half years she had been in prison eighteen times. Her sentences were for many different offences, drunkenness, prostitution, stealing, drunk in charge of a baby, &c. Obviously such a woman is incapable of regulating her life properly.

Another unhappy woman was also born in Birmingham twenty-four years ago. She only got into Standard IV at school, a fact which should have called for investigation at the time. She had several situations, but could not keep one. She was brought to the mental deficiency office by her mother, as happens with a considerable number of such cases. Although feeble-minded she did not show much lack of intelligence on ordinary testing. It was in the management of life that she showed the greatest incapacity. She was a married woman, but could give no information about her husband. Her parents said that her husband had deserted her, and they were not surprised that he had done so. While the necessary arrangements were being made to put her in an institution the inspector under the Mental Deficiency Act was informed one morning that she was being charged at the police court. He went at once to give the magistrates the information that she was defective. When he arrived there he found the magistrates had already dealt with the case by imposing a fine of 5s. for drunkenness. She had disappeared and all trace was lost for some time. She was found

later on, and is now in an institution for mental defectives. Even such well-marked cases are often overlooked because ordinary people who have not had much experience, think that if they can read or write, and do a little simple work for a time, they cannot possibly be mentally defective. Those who have had more experience know that the explanation of drifting from pillar to post and never being able to regulate their lives properly for more than a short time is mental defect, which must have existed from birth.

Mental defectives are to be found in all institutions where the incompetent and those guilty of unsatisfactory conduct gravitate, such as prisons and rescue homes. Unfortunately for the race women of this type are often found in the maternity wards of our workhouses as mothers of illegitimate children. Four years ago the Board of Control reported that in one workhouse alone they found four mentally defective women, with these records :--

(1) Aged 33, with four illegitimate children.

(2) Aged 31, with six illegitimate children.

(3) Aged 25, with five illegitimate children, and pregnant again.

(4) Aged 20, with one illegitimate child.

Such tragedies with the inevitable serious consequences to the country and the race will continue till some instruction in mental defect is given in the medical curriculum. It is an anachronism that the Mental Deficiency Act, which was passed in 1913, and came into force in 1914, should lay the duty on any medical practitioner to give one of the two medical certificates required for dealing, when necessary, with any patient in his practice, while no steps have yet been taken to give the practitioner the knowledge and experience he requires to write such a certificate.

It is scarcely necessary to remind you that mental defect is a condition essentially different from mental disease. Mental disease, like other diseases, may attack an

individual whose previous life has apparently been normal and satisfactory and render him incapable of managing himself or his affairs. The sufferer, however, frequently recovers his health and becomes again a satisfactory member of the community. Mental defect, on the other hand, is an inborn condition dating from birth or a very early age, dependent upon abnormal brain structure, and therefore not responsive to any form of medical treatment. As you know, the brain cells are not fully developed at birth, but become so by the end of eighteen months. The cells of the central nervous system differ from all the other cells of the body in that if they die they are never replaced. This is one of the reasons why serious injury to the brain may have more lasting results than injuries to any other organ. Nature provides some protection in that the number of brain cells is sufficient to provide a large reserve to those which are habitually used. Although no one has actually counted the number of brain cells, it is estimated that there are from three million to nine million in ordinary people.

The diagram you see of the cerebral structure shows that in a mental defective the nerve cells and nerve fibres are not only markedly diminished in number, but are also of inferior constitution. In the diagram, for the sake of clarity, the nerve fibres are shown in one column and the cells in the adjoining column.

The three types of brain depicted are : (1) Normal ; (2) mentally defective, or amentia ; (3) dementia. The changes are most marked in the cerebral cortex. In that area they are found particularly in the pre-frontal and parietal lobes. The cells are irregularly arranged and imperfectly developed. There is a paucity of dendrons, while gemmules and abnormal pigmentation are seen. The cells show the most marked changes in the pyramidal layer of the cortex. The fibres of the association systems show definite diminution, particularly in the outer line of Baillarger, while the super- and

inter-radial bundles show a similar but less marked alteration. This brief description is sufficient to show you that there is a pathological condition of the brain. Can this be correlated with anything noticeable during life? There is no doubt that it is pathognomonic of a type of inferior mentality which can be recognized as a clinical entity. It is a grave mistake to talk of these cases as borderline cases, as is frequently done, not only by lay people but also by members of our profession. As with all clinical conditions there must occasionally be borderline cases, but those who have studied the subject seldom find it necessary to classify a case in such indefinite terms. The false impression that the doctors differ, and that the diagnosis of mental defect is entirely an opinion of the individual examiner was definitely removed in 1906, when Dr. Tredgold and I were appointed by the Royal Commission on the Feeble-minded to examine two areas, with a known population, to see what proportion of mental defect there was in the community. Dr. Tredgold and I did not know one another personally, and had never worked together. He went to certain rural parishes in Wiltshire, while I went to the industrial area of Stoke-on-Trent. When our results were published, it was found that our estimations of the percentage of mental defect in the community agreed to the second decimal point.

These two preliminary investigations showed the possibility of obtaining such definite results that subsequently thirteen more similar investigations were arranged in different parts of the country. Of the fifteen investigations thus made, twelve, including the two first made, were in close agreement. Two differed slightly, but not to such an extent as to invalidate the results obtained. One, however, was found to differ markedly from the rest. Naturally the question was asked, how was this to be explained? An explanation was readily forthcoming in that the Commissioners in Lunacy, as the pre-

decessors of the Board of Control were called, had statistics available showing the incidence of mental disease in different parts of the country. Their records showed that in Hull (where the fifteenth investigation was carried out), as in certain other seaport towns, there was less mental disease in proportion to the population than in the country as a whole. It was not unreasonable, therefore, to consider that the investigator at Hull was correct in finding a lower proportion of mental defect than was found in the other areas investigated. This conclusion was further substantiated by the work of the late Dr. Sullivan, of Broadmoor, who had drawn attention to the fact that in some seaport towns there was a diminished incidence of mental disease.

If mental disease is such a definite clinical condition, how is it that it is often overlooked? Misunderstanding arises largely from the fact that there are three grades of mental defect, of which the lowest is the idiot, the next lowest the imbecile and the third the feeble-minded. Idiots who cannot speak or do anything for themselves can be recognized by practically anyone. The diagrams you see on the wall, showing certain well-marked types of mental defect with unusual cranial configuration, indicate that there is not much difficulty in diagnosing some of these cases. In the next group the imbecile, however, in the majority there is nothing abnormal in appearance. In addition to having a normal appearance imbeciles are often able to carry on a simple conversation satisfactorily; they have a certain amount of knowledge and are often able to do easy work for a time. In the case of the feeble-minded, the difference between the normal and the defective is still less obvious, and often can only be recognized by those who have had special training and experience. It is important to remember that among mental defectives idiots, instead of constituting practically the whole class, form only a small proportion of the whole. In an unselected group of 100

mental defectives while only eight come under the idiot group, and sixteen in the imbecile group, all the rest, that is seventy-six, are feeble-minded and correspondingly difficult to diagnose. How can these cases be diagnosed? At the present time the various systems of mental testing, of which the first was the Binet-Simon, have made it easier to acquire facility in the recognition of mental defect. There is not time now to explain to you any of the systems of mental testing which enable us to classify a defective as being of a particular mental age, meaning by that that he has the same amount of intelligence as an ordinary child of that age. These tests are very useful, but must not be depended upon to settle the whole matter. The diagnosis must always be made independently of the results obtained by mental tests. How is it to be made? By observing how the defective reacts to life. The reliable test is conduct, as shown particularly when he is confronted with a difficulty, or called upon to do something simple for any length of time. The places I have described as being those where mental defectives are most frequently found indicate the kind of unsatisfactory conduct they exhibit. It is of fundamental importance that not only our profession, but all social workers should realize these facts, because many social problems are seriously complicated by the mental defective, who must be dealt with first.

Is there any treatment which will cure mental defect? As I have already explained to you, it is an inborn condition, fully developed at a very early stage of life. No treatment such as we can conceive at present is likely to be of any value. This does not mean, however, that nothing can be done to help these unfortunates. The majority are amenable to training, and benefit greatly by being supervised, regulated and controlled. Many of the less extreme cases manage fairly well at home, especially if they have had the advantage of going to a special school for mental defectives. Worse cases

usually require institutional care for a time at least. Many must be in an institution for the whole of their lives, but some after seven to twelve years' training learn to behave sufficiently well to manage satisfactorily in an ordinary home.

There is another reason why this condition must be taken seriously, and that is its hereditary nature. While mental defect is undoubtedly in many cases inherited from previous generations, the proof of heredity is complicated by the fact that it does not reveal itself unless inherited from both sides of the family. According to the Mendelian laws of inheritance it is therefore a Mendelian recessive characteristic, often latent through several generations. If the child of every person who carries the taint of mental defect in his germ cells were mentally defective, dealing with the condition would be an easy problem. As it is, a certain proportion of the ordinary proportion are what is technically spoken of as "carriers," without having any idea of that themselves. It is only when they mate with someone who has the same taint that there is a chance of a proportion of their family being defective. This is one of the reasons why sterilization, which has been often suggested by the inexperienced as a panacea for mental defect could only produce a definite result after the lapse of a long time. One scientist has estimated that it would require eight hundred years. The chief reason, however, why sterilization, which might be wise in exceptional cases, is no solution of the problem of mental defect arises from the fact that the delinquent boy who has been sterilized is likely to go on stealing, and requires custodial care for that reason. Nor could feeble-minded young women who had been sterilized be turned adrift in the world. If this were done, they would spread venereal disease broadcast.

The only satisfactory method of dealing with the problem is by means of segregation when necessary. There is little doubt, however, that much may be done to gradually diminish the incidence of mental defect in

other ways. Although there is no doubt about the hereditary nature careful investigation shows that the previous predisposition is likely to be increased by unsatisfactory environment, particularly during the period prior to conception and during the early period of embryonic life. There is, therefore, good reason to hope that the antenatal clinics, whose work is so valuable in other ways, will help considerably to diminish the incidence of this blight. The infant welfare centres help too. Their greatest value, however, will be shown when they recognize mental defectives at an early stage and give satisfactory directions for regulating their lives. When the school clinics are able to tackle psychological problems as well as physical ones, they will constitute another important factor in dealing with the problem, as they will recognize almost all the cases overlooked at an earlier stage and indicate what must be done to protect the community.

THE NATURE OF MENTAL DEFICIENCY.

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(A Fellowship of Medicine Post-Graduate Lecture.)

SINCE the beginning of this century the interest of the general public and the medical profession in the subject of mental deficiency has been steadily increasing. The reason is clear. It is now known that the number of mental defectives in the community is very considerable, greater, in fact, than that of the insane. It probably amounts to at least 8 per 1,000 of the total population of the country. It is also realized that defectives

are a serious economic burden and, in many cases, a no less serious social menace ; consequently, that their ascertainment, correct diagnosis, and proper administrative care have become matters which the nation can no longer afford to neglect. At the present day the subject is undoubtedly one concerning which every medical practitioner must have an adequate working knowledge. This knowledge must be based upon an accurate concept of the nature of mental deficiency, and it is with this fundamental point that I propose to deal in this lecture.

The term mental deficiency is comparatively new. Literally, it may be said to embrace all conditions of mind in which there is marked diminution of capacity. It may, for instance, be applied to the dement and the insane. For some years past, however, the term has gradually been acquiring a more restricted and specific meaning, and at the present day, when we speak of mental deficiency we mean a condition of incomplete mental development, or, as it is technically termed, "amentia."

From at least as early as the fourteenth, to near the close of the nineteenth century, the only forms of such incomplete mental development which were generally recognized were the severe and obvious ones termed idiocy and imbecility. Towards the end of the last century, however, it was clearly demonstrated that less pronounced grades of defect existed, and these occurred amongst school children as well as amongst the adult population. In the elementary schools, at which attendance had then become compulsory, it was found that there was a class of children who, whilst not so defective in understanding as the imbeciles, nevertheless suffered from a degree of mental defect which seriously interfered with their education. Amongst the general population it was found that a class existed who, whilst similarly not so defective as imbeciles, nevertheless suffered from such a degree of defect that they were unable to compete on equal terms with their normal fellows, or to maintain an