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THE NATURE OF MENTAL DEFICIENCY.

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THE term 'mental defect' may be applied to any marked falling away from that degree of mental capacity which is the normal or average in the race to which the individual belongs. Strictly speaking, it covers decay as well as imperfect development of mind; indeed, the Royal Commission on the Feeble-minded suggested that it should be used for all forms of mental disease, including insanity. Wisely, I think, this suggestion has not been adopted, and the general tendency is to restrict the term to conditions of imperfect mental development, and to exclude both perversion of mind (insanity) and decay of mind (dementia).

It is very necessary to point out, however, that imperfection or defect of mental development is not necessarily synonymous with mental deficiency in the legal sense. The Mental Deficiency Act lays down certain criteria, and these necessitate the defect being of a particular kind before a person can be regarded as a defective in the eyes of the law; in other words, whilst legal mental deficiency is due to a psychological defect, a mind may be defective without the person being legally mentally deficient. I shall deal with legal mental defect presently; for the moment, and as a preliminary to the understanding of this, I propose to consider some points regarding mental defect from the wider standpoint.

It is clear that before we can discuss what constitutes defect of mind we must know what processes go to the make-up of normal mind. Our knowledge regarding this, however, is admittedly very

imperfect; mind is the sum total of such an elaborate series of processes of the most intricate interdependence that the attempt to analyze it into its component parts is fraught with the utmost difficulty. Nevertheless such an analysis is clearly necessary for the purpose in view, and the most helpful method would appear to be to consider mind from its evolutionary and comparative aspects; that is, to study mental manifestations as they occur at different stages of evolution and in individuals of different mental capacity. As a result of purely clinical observations of this kind, I think we may arrive at certain tentative conclusions as to the chief processes of mind, and I have endeavoured to represent these in diagrammatic form in the hope that they may in some measure elucidate the nature of mental deficiency.

At the outset it is desirable to state that although it will be convenient to speak of mental functions as if they were independent entities, I am far from suggesting that mind is divided into watertight compartments or that these various functions really exist independently. This, of course, is by no means the case, and there are probably few, if any, manifestations of mind which are not the resultant of many of these processes. Moreover, as I have already remarked, the difficulty of analysis is so great that the divisions made must be regarded as purely tentative. Clinical examination, however, would seem to show that the processes to be described are subject to such variations of development in different individuals, in some cases being so imperfect as to constitute a distinct psychological defect, that for our present purpose it is convenient, and indeed justifiable, to regard them as psychological entities.

OUTLINE OF NORMAL MENTAL EVOLUTION.

The functions of mind may be divided into three main groups, namely, *perception*, *apperception* or *assimilation*, and *feeling*; and we may consider these at four different evolutionary levels. The lowest level (*Level 1*, *Fig. 1*) represents the primitive vertebrate type of nervous system, consisting of afferent and efferent pathways and central ganglia. An animal of this type has in all probability no consciousness and is incapable of willed movements. It performs movements which are highly complex and co-ordinated, but these are essentially reflex and conditioned by the incoming stimuli and the nature of its innate tendencies (instincts). We must conclude, however, that such a primitive central nervous system is pregnant with vast potentialities for future evolution.

The next level we may consider (*Level 2*) is that of the higher mammals. This stage is characterized by an increased development and a differentiation of the neuronie germs into the three psychic

processes, perception, apperception, and feeling. Perception at this level consists mainly in the ability to form simple mental images of objects actually present to the senses (percepts); but there is in all probability some capacity for forming simple ideas, or concepts, of objects not actually present. Apperception consists of attention (mainly passive), simple comparison, and will, and these result in a simple capacity for modifying the reflex action which, at a lower level, would result from external stimuli and instinctive tendencies, in accordance with such simple percepts and concepts; in other words, for transforming purely reflex action into action to some extent in accordance with the requirements of the immediate environment. Feeling, in the main, consists of a consciousness of the general pleasantness or unpleasantness of the sensations experienced, but there is probably also some capacity for experiencing such simple primary emotions as fear, anger, affection, etc.

Level 3 is representative of the mind of primitive man living a communal life, and these mental functions have undergone a still further elaboration and differentiation. Perceptive processes are now divisible into three classes; firstly, the individual is capable of forming more elaborate percepts and concepts and of a simple train of thought; secondly, there has now been evolved a capacity for forming simple abstract ideas, such, for instance, as those of goodness, badness, powerfulness; and, thirdly, he has now capacity for simple symbolic imagery. This last is a very important factor in subsequent intellectual development, but at this stage it goes little beyond the ability to recognize that a certain totem is symbolic of a particular tribe, that a particular head-dress or ornament is symbolic of power or office, and that certain rude hieroglyphics represent certain ideas. Feeling has similarly evolved; not only have emotions become more complex, but certain of them have become organized into groups of simple sentiments. Thus, such emotions as awe and wonder have given rise to a simple religious sense; emotions of affection, self-respect, and fear of the consequences of transgressing the social code have combined to produce a sentiment regarding the rightness or wrongness of certain acts; in other words, an elementary social sense; similarly the feelings of attraction and repulsion roused by certain colours, forms, and tastes have resulted in the development of a primitive æsthetic sense. Apperception has undergone a similar evolution. Attention, which was formerly largely passive, has now given rise to active attention, and at this level it seems possible to differentiate apperception into three processes, namely, a capacity for comparing ideas and forming simple judgements, an ability to foresee the proximate consequences of actions (prevision), and an increased power of volition. At this level, therefore, we may regard the per-

ceptive functions as having evolved into a capacity for thought, the apperceptive into intelligence, and those of feeling into more complex emotions and simple sentiments. The net result is that the individual is now able to form ideas as to his surroundings, to appreciate simple symbols, to perceive simple causal relationships, to experience emotions regarding a God, right and wrong, and tribal obligations, to form simple judgements, to make simple plans, and generally to adapt his conduct, not only to the requirements of the immediate moment, but to those of the near future.

In *Level 4* we have arrived at civilized man, and this stage is characterized by an increased development of each of these mental functions. The perceptive group forms the basis of learning, and is made up of (1) Complex concepts, thought and imagination ; (2) Complex abstract ideas ; (3) Symbolic perception, e.g., alphabetical signs, numerals, musical notation. The apperceptive group is the basis of that higher quality of intelligence which we may term wisdom, and consists of (4) Deliberation, discrimination, and reasoning ; (5) Volition and resolution ; and (6) Prudence, planning, and inventiveness. Feeling, in addition to an increased complexity of emotion, has now evolved into definite (7) *Æsthetic*, (8) Religious, and (9) Social, and its still higher development, Moral sentiment.

In consequence of this higher mental evolution, the average normal civilized man has capacities for learning and feeling, together with apperceptive functions enabling him to utilize and apply these capacities, which place him on a considerably higher plane than his primitive ancestors. His increased knowledge of his surroundings, his higher development of sentiment, his greater powers of deliberation, mental comparison, judgement, invention, and volition, now enable him to make plans, not merely for near but for remote contingencies, and to modify his instinctive impulses to action in accordance with the plans so made. And it is this capacity for more elaborate concepts and sentiments, with the increased power of inhibiting his instinctive tendencies and acting in accordance with such higher ideals and sentiments, which constitute the essential difference between a civilized, as compared with a barbaric, people.

PSYCHOLOGICAL DEFECT.

But, whilst such a degree of mental development is characteristic of a civilized community in general, it is obvious that the individuals of such a community differ from one another very considerably. In the first place they differ regarding their general evolutionary level, some being nearer and others much further away from the stage of primitive social man. Secondly, they differ as to the relative development of the three main psychological processes, some being

characterized by much learning or much sentiment, with but little wisdom ; others by plenty of sound common sense with but little learning or sentiment, and so on. It is to variations of this kind that differences in character and personality are due, and they must be regarded as variations within the normal developmental range.

There are, however, other individuals who would appear to be at the extremes of, or even outside, this normal range, inasmuch as they are characterized by an excess or defect of development of certain mental processes of such a degree as to constitute a decided abnormality. A greatly increased development of a particular mental process may give rise to genius, as distinct from all-round ability ; a marked under-development constitutes a psychological defect. With regard to defective development, there are, for instance, individual members of every civilized community who are so lacking in the perceptive functions of mind as to have practically no capacity for abstract learning, and who, in this respect, rank little higher than *Level 3*. Further, there are individuals who are defective in one of the higher perceptive processes only, such as that for complex abstract ideation or for symbolism. It is probable that such a defect of symbol perception is the cause of that inability to learn to read or to sum which is known as word or number blindness, and which is by no means uncommon in school children. Similarly with the processes concerned in feeling, there are persons whose capacity for emotion and sentiment is little higher than that possessed by primitive social man ; there are others who, whilst having attained to *Level 4* with regard to one sentiment, such, for example, as that of æsthetics or religion, are markedly deficient in moral or social sense. The apperceptive functions may in like manner be markedly under-developed in whole or in part, and there are persons who have good powers of active attention and volition, with but little ability to discriminate, reason, profit from experience, or make plans. Conversely, there may be considerable ability for planning and inventiveness, with a marked inability to adapt the general conduct to the practical requirements of life.

Since marked abnormalities of this kind—and I am here only speaking of those cases where they are marked—are due to the developmental arrest of processes which are normally present in the individual's compeers, we may, I think, rightly look upon them as psychological defects, and from the strictly literal point of view such persons may be said to be mentally defective.

LEGAL MENTAL DEFICIENCY.

There is, however, a great difference between mental defect in the literal and in the legal sense, just as there is in the case of

mental disorder. The Mental Deficiency Act of 1913, which is the authority on this matter, has clearly laid down that to be a mental defective in the eyes of the law there must be such a defect of mind as to render the individual incapable of discharging his obligations as a member of the community. In other words, the term mental deficiency is applied with a restricted and specific meaning, and the criterion of its presence is a social one. It is true that the Mental Deficiency Act does not define mental defect as such, but it specifies

FIG. 1.—Scheme of normal mental evolution.

and defines four classes of this condition, and these definitions make this point quite clear.

Thus, to quote from the official definitions of these four classes, *idiots* are "unable to guard themselves against common physical dangers"; *imbeciles* are "incapable of managing themselves or their affairs"; *feeble-minded* are persons who "require care, supervision, and control for their own protection or for the protection of others"; and *moral imbeciles* have "strong vicious or criminal

propensities on which punishment has had little or no deterrent effect ”.

The question we have therefore to consider is, What is the particular psychological defect which constitutes legal mental deficiency ?

With regard to the perceptive faculties, it is clear that while ideation and imagination, ability to form abstract ideas, and an appreciation of complex symbols—in short, a general capacity for learning equivalent to that of *Level 4*—are necessary if an individual is to hold an average place in a civilized community, he can yet maintain

FIG. 2.—Subnormal type.

FIG. 3.—Defect of wisdom. A moral, conscientious, learned fool.

FIG. 4.—Defect of learning and sentiment, but abundant ‘common sense’.

FIG. 5.—Potential criminal. Defective moral (? and religious) sentiment.

FIG. 6.—Grades of legal mental defect.

FIG. 7.—Moral imbecile.

existence in the humbler walks of life in such a society with perceptive functions of a development equal to *Level 3*, and as a matter of fact a considerable number of persons in every civilized society do manage thus to hold their own with no higher mental equipment—they are the hewers of wood and the drawers of water. Defective educability, therefore—that is, mere inability to progress in school—does not by itself of necessity constitute mental deficiency in the legal sense, and this is a fact which has to be borne in mind in devising and applying the serial tests which are now in such common use. On the other

hand, an individual who in this respect falls below *Level 3*, and who is incapable of abstract ideation or of the perception of elementary symbols, will thereby have such an inadequate appreciation of his surroundings as to require some degree of supervision and control, and such a person will be a defective.

In the case of the emotional processes, it is also obvious that whilst an æsthetic and a religious sense are desirable attributes in a member of a civilized society, they are by no means essential to the maintenance of existence without supervision, as is amply proved by the life histories of many persons who are quite devoid of these qualities. With regard to moral or social sense the case is somewhat different. It might be expected that a person who was quite devoid of this sense, and who was lacking in any feeling of right or wrong, of honour or honesty, or of social or moral obligation, would be incapable of conforming to the codes and laws established by the community, and would in consequence need protection and supervision for the sake of others. This probably is so in the somewhat rare cases in which this sense is completely absent, and such persons comprise the class known as moral imbeciles; there are, however, many persons in whom this sense, whilst not being entirely absent, is yet markedly under-developed, and then the result would appear to depend upon the amount of wisdom they possess. If gifted with a moderate amount of this, although the contemplated commission of a crime may arouse no feelings of repugnance, they yet realize that if they are found out the disadvantages, in the long run, will probably outweigh the advantages, that on the whole "honesty is the best policy", and in this way their apperception usually suffices to keep them within the law. Such persons are not habitual criminals and do not conform to the statutory definition of moral imbeciles; they are, however, potential criminals, they are habitually apt to sail very close to the wind, and they will commit crime if the chances of detection seem slight probably they may be highly successful men of business. It would therefore appear that a development of the processes of feeling equal to, or even less than, that of primitive man, provided intelligence be present, is sufficient to prevent the individual being certifiably mentally defective.

In the main it is the apperceptive functions which are chiefly concerned in influencing the conduct of the individual, since it is these which enable him to exercise the necessary control over his instinctive impulses and to adapt his actions to more remote considerations and contingencies; consequently it is the degree of development of apperception which chiefly determines the legal status of the individual. While it seems probable that a development equal to that of *Level 4* is essential if he is to hold his own in a complex environment,

an amount of intelligence no greater than that of primitive social man (*Level 3*) will suffice under simpler surroundings. Such a poorly equipped individual will necessarily occupy a low status in the community, but he will have sufficient intelligence to manage his affairs at this level, to make suitable plans for contingencies not too remote, and to deal successfully with the requirements of his station; he will not, therefore, be a mental defective. It is probable, however, that *Level 3* represents the minimum of intelligence compatible with the adaptation of conduct in a human community, and that with any markedly less degree of development than this he will require supervision and control and will be legally mentally deficient.

I say 'markedly' advisedly, for it is clear that with a slightly less degree of intelligence than *Level 3*, whilst an individual might be unable to survive unaided in any ordinary stratum of society, he might be able to do so in a backwater and under especially favourable conditions. There are, for instance, many persons in this country who get along fairly well in some simple routine occupation in which they are removed from the competition of the labour market and are treated with a little indulgence, but who speedily reveal their incompetence when called upon to shift entirely for themselves or when faced with circumstances outside the range of their previous experience. Their mental defect, which was previously latent, then becomes patent, and their success or failure is clearly dependent upon the nature of their environment. Persons of this type are often spoken of as 'borderlanders'. I think, however, that they are really mentally deficient, although their defect may not attract attention, and the necessity for dealing with them under the Act may not arise until the force of circumstances takes them out of their special environment. Many persons of this kind were doing tolerably well on the land, or in some menial occupation, until they were enlisted into the Army during the recent war; their defect then soon became obvious. I am also of the opinion that these persons form a very considerable proportion of our pauper population and of the 'ins and outs' of workhouses.

We have regarded the complex psychological function designated 'Wisdom' as divisible into the three separate processes numbered in the diagram (4) deliberation, discrimination, and reasoning, (5) volition and resolution, and (6) prudence, planning, and inventiveness; it is of interest to ask whether we can in certain cases point to a defect specially incident upon any one of these processes as being responsible for that social incapacity which is the criterion of legal mental defect. I think that in certain persons suffering from a mild grade of defect we can do so. I have examined many individuals who are not markedly deficient in either perception or feeling, who are not educationally very

backward, and not greatly, if at all, lacking in moral sense, and in whom psychological tests reveal a fair degree of discrimination, reasoning, and planning ability, and yet they are so emotional and unstable, so readily distracted by every chance word and happening, so lacking in purpose, that they are utterly incapable of settling down to, and following, a definite course, and in consequence they drift aimlessly through life like a rudderless barque. I believe the special defect here to be one of volition; although such persons may know the right course to take, they are inherently incapable of focusing consciousness sufficiently upon the idea of this to overcome instinctive tendencies and the distractions of the moment, and they consequently cannot consistently follow this course. Cases of this kind are not usually regarded as mentally defective, and their seeming intelligence and educational acquirements would undoubtedly cause great difficulty in certifying them. They are often spoken of as suffering from 'mental instability', 'lack of control', defective 'character' or 'temperament'; but the condition is clearly due to a psychological abnormality, and if this has existed from birth and is permanent they would seem to come within the statutory definition, since they are certainly in need of supervision and control. In other cases there would not appear to be any defect of volition, but there is either little ability to compare ideas and to reason, or an absence of ability to look ahead and to make plans for eventualities, and such defects may similarly lead to marked social disability.

These general considerations, together with observation of the conduct of defectives, enable us to represent the different mental types and the various grades of aments diagrammatically, and I have endeavoured to do this in *Figs. 2 to 7*.

Fig. 2 represents the subnormal type; in this there is a general and uniform imperfection of development of all the processes of mind, so that the individual stands on the psychological level of primitive social man. Such a person has capacity for thought, but practically no learning; he has feelings and emotions, but is defective in the higher sentiments; he has sufficient intelligence to adapt his actions to his simple environment, but is too defective in wisdom to do more than just hold his own in this environment. He is not mentally defective from the legal aspect, but he necessarily inhabits the lowest stratum of a civilized community.

Fig. 3 represents that not rare class of moral, conscientious, learned fools. The capacities for learning and sentiment have a development equal to that of civilized man, but the apperceptive faculties are on the level of primitive man. There is consequently sufficient intelligence to adapt conduct to the moment and the

immediate future, but little ability to foresee and provide against remote contingencies. They are not usually legally mentally defective.

Fig. 4 represents an equally prevalent type, that of the man who is unlearned and unemotional, but who has plenty of common sense; he is often highly successful in exploiting the learning of others.

Fig. 5 represents the type which I have called the potential criminal. He has capacity for learning, wisdom, and perhaps an æsthetic sense equal to those of civilized man, but he is decidedly deficient in the moral and usually, but not always, the religious sentiments. He will commit a crime if he thinks there is no fear of detection, but he does not commit crimes which are likely to be discovered, because he realizes that such would be to his disadvantage. He may be a successful financier or man of business.

Fig. 6 represents three grades of legal mental deficiency. The lowest grade of all, that which is known as absolute, complete, or profound idiocy, corresponds with *Level 1*. Persons of this severe grade of defect are incapable of thought, feeling, or will; their existence is entirely a vegetative one, such movements as they make are purely reflex and instinctive, and some of the primary instincts, such as sucking and propagation, are often lacking. Immediately above this grade is one slightly less defective known as partial or incomplete idiocy, and this merges into the lowest stratum of *Level 2*. The members of this group are capable of very elementary percepts, feelings, desires, and volition; but their appreciation of their surroundings and their intelligence are so defective that they are incapable of guarding themselves from the common physical dangers which threaten existence.

The imbeciles, as a class, correspond to *Level 2*, although the higher members merge into *Level 3*. They are capable of forming simple percepts and concepts, but they are practically devoid of any capacity for abstract ideation or appreciation of symbols, and they are unable to make any progress in learning. They are capable of feeling and of the simple primary emotions, but have neither æsthetic, social, nor religious sentiments. They have desire and will, and can, to some extent, adapt their actions to the requirements of the moment; but their attention is mainly passive, they cannot reason, they cannot form a mental image of the consequences of their acts, they cannot make plans, and they cannot inhibit their instinctive impulses. These defects result in an inability to perform work other than of a very simple routine character to which they have become habituated, and to "manage themselves and their affairs".

The lowest members of the feeble-minded grade correspond in the main with *Level 3*; there is, however, one important difference.

They have some capacity for thought, for forming simple abstract ideas, and for the appreciation of symbols, and consequently they can usually be taught to do simple reading, writing, and summing. They are capable of feeling and of the simple emotions, and have religious, social, and æsthetic sentiments in an elementary degree. But—and this is where they differ from *Level 3*—their apperceptive functions are not developed to a similar extent; whilst they have volition, they are defective in the power of comparing ideas and of forming judgements, and they have little ability to foresee the consequences of their actions and thus to make plans for even the immediate future. This defect of intelligence constitutes a very important difference between, on the one hand, the feeble-minded, and, on the other hand, primitive social man and the merely subnormal type. These two latter are able to maintain existence without supervision and to hold their own in a primitive community or a low stratum of civilized society; but I am of the opinion that the defect of the feeble-minded person is such that he would be incapable of existing without some control or supervision in any level or stage of human society. I do not here intend to enter into the question of the causation of mental defect; but I may remark that it is on account of this difference, and this marked relative deficiency of the apperceptive faculties, that I am unable to accept the view that mental defect is due to atavism; that is to say, that it is merely a harking back to a previous stage in the normal evolution of the race. It seems to me that in mental defect we have not a general evolutionary failure, but one which is incident especially upon the apperceptive processes of mind; it may even be confined to these in the milder grades of feeble-mindedness, and I am of the opinion that this is the essential psychological basis of legal mental defect. This selective defect results in an irregularity and disharmony of mental action which is very characteristic of this condition; it is very difficult to imagine that it can represent a normal stage in the evolution of the race, and I think the more likely explanation is that the defect is pathological.

The mildest degree of mental defect is that known as high-grade feeble-mindedness, and while the majority of the members of this class resemble those of the preceding in the fact that their intelligence does not come up to that possessed by primitive social man, they stand above them in that they have a relatively greater development of the capacities for thought and feeling. It may occasionally happen for one of the perceptive processes to be developed to an even extraordinary extent, and this is more often the case with that concerned in symbolic perception. We then have a variety of '*idiot savant*', such, for instance, as a calculating genius or an expert pianist. Generally,

however, while the high-grade feeble-minded can make some progress in school, their educational acquirements fall decidedly below those of the normal person of *Level 4*. The same is the case with regard to feeling; in some instances the æsthetic and religious sentiments are quite up to the average standard of *Level 4*; it may, indeed, happen for the æsthetic sense to be developed beyond the average of this level, producing an artistic genius; but generally the feeling processes are below the average of civilized man. Whilst the apperceptive faculties as a rule show a uniform defect of development, it is in these cases of high-grade feeble-mindedness that we not infrequently find the condition to which I have already referred, namely, a much greater incidence of the defect, or even its limitation to one particular process of the apperceptive group.

The fourth class of mental defectives recognized and defined by the Act, namely, moral imbeciles, are represented by *Fig. 7*. In these persons the perceptive faculties are up to, and even beyond, the average of civilized mankind, and in consequence they not only show none of the educational backwardness of the ordinary feeble-minded person, but they may have a high degree of learning. Their essential characteristic is a defect in the processes of apperception and feeling. With regard to the former, they are not only devoid of wisdom, but their intelligence is less than that possessed by primitive man, and the defect seems to be specially marked in the processes of discrimination and foresight. With regard to feeling, whilst they are capable of the complex emotions, there is a marked defect of the sentiments, which fall below those present at *Level 3*, the defect being particularly marked in the social sense. It is obvious that the facts that the functions of thought and learning are of normal development in these persons, that they are well educated and able to hold their own in conversation, result in their having very little clinical resemblance to ordinary mental defectives, and consequently their diagnosis and certification often present very great difficulties. I have recently dealt more fully with this condition elsewhere*; but I may here remark that whilst real moral imbecility is not, according to my experience, the common condition that some persons would claim, and is apt to be closely simulated by temporary disorder of the regulating faculties, especially during the period of adolescence, there is not the slightest doubt that it has a very real existence, and that persons so affected are very dangerous and incurable criminals.

In conclusion, I would like to say that although the necessity

* *Proc. Roy. Soc. Med.*, 1921, xiv, April.

for brevity has compelled me to make somewhat dogmatic statements, it is far from my intention to dogmatize on this subject. The division which has been made of the various mental functions is purely tentative, and this, together with the diagrams, is merely an attempt to picture the nature of mental defect and its relationship to normal variations.