Clinical lecture on idiocy and imbecility : delivered to students of Owens College, Manchester, (Dr. Ashby's class for diseases of children) / by G.E. Shuttleworth.

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CLINICAL LECTURE
ON IDIOCY AND IMBECILITY.

Delivered to Students of Owens College, Manchester (Dr. Ashby's Class for Diseases of Children).

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GENTLEMEN,—In welcoming you as observant visitors to the Royal Albert Asylum for Idiots and Imbeciles of the Northern Counties, I presume it will be scarcely necessary for me to point out wherein the inmates of this institution differ from those of a lunatic asylum. As, however, I am sometimes surprised to find that, even amongst members of our profession, there is a want of clear appreciation of the distinction between the lunatic and the idiot, a contrasting definition of each class may not be out of place. Briefly, then, the lunatic is one who has lost his intellect, the idiot has always lacked it; in the one case, there is mental disease; in the other, mental defect. Lunacy, or insanity, is characterised by disordered mental action; idiocy, or imbecility, by defective mental action. Esquirol aptly compares the madman to "a rich man become poor, whereas the idiot has always been in misfortune and misery." The term imbecility is now usually employed to denote merely a milder degree of idiocy, though formerly, and by French writers, it was used specially to designate mental weakness supervening in infancy. The Latin *Amentia* includes idiocy and imbecility; and the latter term (that is, imbecility) is, in my opinion, inappropriately applied when used (as we find even in official returns) to denote mental failure in old age, properly described as Dementia.

A few words as to the prevalence and distribution of idiocy. The census of 1881 gives 32,717 persons—16,105 males and 16,612 females—returned in the schedules for England and Wales as "idiots and imbeciles," being in the ratio of 1 to 794 of the population. Of these, no fewer than 9,183 were aged 45 years and upwards, of whom many so-called "imbeciles" were probably the subjects of dementia. On the other hand, parental reluctance to recognise mental defect in the case of young children is evidenced by the fact that the whole number of "imbeciles and idiots" under 5 years of age is returned as 451 only; and it is probable that a considerable increment, estimated by the Commissioners as at least one-fourth, should be added to the census returns, which would bring up the ratio at all ages to 1 in about 620 of the population.[1]

It is curious that, whilst the census returns give in the aggregate a slight excess of female idiots and imbeciles, the experience of all British institutions shows that there is about twice the demand for accommodation for male as for female imbecile children. This is to some extent explained by the fact that the excess of females exists only in groups of ages above 25, below which age 7,287 males and 5,572 females are returned. The greater liability of the male head to

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[1] *Census 1881 Report*, vol. iv, p. 68, etc.

injuries in birth is probably one cause of the preponderance denoted by these figures. A like preponderance obtains in the case of deaf-mutes.

With regard to distribution, it is interesting to note that, in the seven northern counties from which the patients of this asylum are mainly drawn, the proportion of idiots is somewhat less than in England and Wales at large ; the proportion in the former to the general population being 1 in 984, as compared with 1 in 794 in the latter. The proportions in the various counties range from 1 in 1,425 in the mining county of Durham, to 1 in 757 in pastoral and mountainous Westmorland.

You will probably have been struck with the defective physique which is manifested by many, if not the majority, of the inmates of the asylum. Their stature and weight, if compared with those of normal children of similar age, are decidedly below the average ; the former being deficient at 5 years by 1 inch, at 10 years by 2 inches, at 15 years by 3 inches, and the latter at 8 years by 4½ lbs., at 10 years by 6 lbs., and at 15 years by 8 lbs.[2] The relative rate of growth of male and female idiots respectively varies, much as it does with normal children at corresponding ages, though all along inferior. The development of puberty is for the most part deferred in the imbecile class.

It is a mistake to suppose (as we find laid down even in students' text-books) that of necessity the brain of an idiot is undersized. You will probably have noticed that, amongst the children you have seen, small heads do not obviously preponderate ; and, on comparison of a series of cranial measurements of our population and a series (corresponding for groups of ages) taken at a neighbouring orphanage, we shall find that the respective averages do not materially differ.[3] The explanation is, that the abnormally large heads at one end of the series compensate for the abnormally small heads at the other ; and thus, to quote a somewhat trite but quaint saying of Fuller, "heads are sometimes so little that there is no room for wit, and sometimes so long that there is no wit for so much room."

Various bases of classification have been proposed by writers on the subject of idiocy. Long ago, Esquirol proposed a psychical classification, dividing idiots into three classes, according to their degree of capacity for speech. About twenty years ago, Dr. Langdon Down pointed out the curious ethnological resemblances of certain groups of idiots, and suggested that a division might be made into Caucasian, Ethiopian, Malay, and Mongolian types. More recently, he has proposed (in Quain's *Dictionary of Medicine*) an etiological classification ; but, from this standpoint, perhaps the most comprehensive classification is that put forward by Dr. W. W. Ireland in 1872, and further elaborated in his excellent work on *Idiocy and Imbecility*. Whilst expressing my obligations to both these sources, I shall venture to submit to you a scheme of classification combining some of the features of each, which I have myself found practically convenient. In the first place, a broad division of all cases of imbecility may be made into *congenital* and *non-congenital* cases. Subordinate to these primary divisions, and in a sense intermediate, we have a group of cases in which the signs of imbecility are not manifest from birth, but appear at some crisis of childhood ; and these Dr. Down has named *developmental* cases. It seems questionable whether these cases should form a subclass under the congenital or the non-congenital heading ; for, though the imbecility may not be developed till the first or even second dentition, the "tendency to mental catastrophe" is, no doubt, innate. At all events, such cases are to be carefully

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[2] See paper by author in Health Exhibition Literature, vol. xi, p. 532, and tables by C. Roberts, F.R.C.S.

[3] *Trans. International Medical Congress*, 1881, vol. iii, p. 610.

distinguished from the purely *accidental* or *acquired* cases. In tabular form, the classification is as follows.

CLASS A.—CONGENITAL.

Type.	Type.
1. Microcephalic.	5. Primarily neurotic.
2. Hydrocephalic (also non-congenital).	6. Paralytic (also non-congenital).
3. Scrofulous—"Mongol type."	7. Choreic (also non-congenital).
4. Sensorial (also non-congenital).	8. Cretinoid: (*a*) sporadic; (*b*) endemic.

CLASS B.—NON-CONGENITAL.

a. Developmental.

9. Eclampsic.	11. Syphilitic.
10. Epileptic.	12. Post-febrile (also *accidental*).

b. Accidental or Acquired.

13. Toxic.	15. Emotional.
14. Traumatic.	

16. MIXED CAUSES.

Such a classification as the above will help us to consider in definite order the various groups of patients I have arranged for your inspection; it does not, however, profess to be scientifically exact or complete. Some of the rarer forms of idiocy (such as those named from characteristic cranial distortions, "plagio-cephalic," "scapho-cephalic," etc.) I purposely omit; also those called "hypertrophic."

The first inquiry that occurs to us is, which are the more frequent, the congenital or the non-congenital cases? If guided simply by the statement of parents, we shall conclude that the non-congenital are; and this is probably true, if we include under that term all the developmental cases. My own impression, however, is that parents will always give themselves the "benefit of the doubt;" and they are very slow to see and to acknowledge congenital infirmity in their offspring. There is no doubt, to use the words of Dr. West (*Diseases of Infancy*, 6th edition, p. 275), that, popularly, "a sense of hopelessness attaches to congenital disease;" but, so far as prognosis is concerned, my own experience is in accord with that of Dr. Down and others, that congenital cases, as a rule, offer more hope of improvement than the non-congenital.

Some help may be obtained in distinguishing between these two classes by the physiognomy. This boy with the shelving forehead, diminutive cranium, and bird-like aspect; and this one with the high, narrow-vaulted palate, and unshapely ear, planted low down and far back, are doubtless cases of congenital imbecility; as is also that girl with the branny skin, tender eyelids, wiry hair, squarely built head, and obliquely slanting eyebrows. On the other hand, this poor lad, with regular features and pleasing physiognomy; and this bright-looking, but restless girl, with good teeth, well-formed mouth and healthy skin, are examples of the non-congenital variety: in the one case, epilepsy has destroyed the intellect; in the other, some catastrophe, during teething, arrested its development. In spite of their comparatively bright appearance, they are amongst the least hopeful children here, and illustrate the remark of Dr. Down, "that the prognosis is, contrary to what is so often thought, inversely as the child is comely, fair to look upon, and winsome."[4]

Now, let us glance at some of the typical groups before us. First, we are struck with the extreme smallness of some of the heads; these are of course the microcephalic cases of our classification. Look at this lad "Freddy," now nearly 20 years of age, but only 55 inches high; his head measures, in its greatest circumference, no more than 15 inches. We have had him here nearly fourteen years, and during

[4] *Obstetrical Transactions*, vol. xxii.

that time his stature has increased from 40 to 55 inches, but his head-circumference only from 14⅛ to 15 inches. His forehead rapidly recedes, and his occiput is small ; his features are, however, shapely, his eyes large and lustrous, and his nose of Roman type. Like the so-called Aztecs, he has an aspect which reminds one of a bird. He is active in movement ; and, though he can say but little, he is fairly observant of all around him, and makes his wants known by persistent gesture. He is somewhat pugnacious (a tendency, by the way, I have observed in some other microcephalics). He has improved to some extent in habits, but very little in intelligence and industry ; and I need hardly say that, in extreme cases of microcephalic imbecility, the mental is limited by the cranial capacity. I have known, however, some amount of education and industrial training to be imparted to girls with head-measurements between 17 and 18 inches. The brain is, as a rule, small in these cases, from formative arrest of intra-uterine origin ; and I have made *post mortem* examinations of cases in which it has weighed 21½ ounces, 13½ ounces, and 27½ ounces respectively. I show you a drawing of the first-named brain, from which you will see that the occipital and temporo-sphenoidal lobes were very imperfectly developed, and the cerebellum was quite uncovered (*Journal of Mental Science*, October, 1878). There is but little evidence in support of the theory which attributes microcephaly to premature cranial synostosis.

By way of contrast, let us now turn our attention to the group of cases illustrating hydrocephalic imbecility. This may be either of congenital or of non-congenital origin ; but for our purpose the distinction is not of practical importance, for it is only when active disease has subsided that training is practicable. In such cases, however, considerable improvement may be looked for ; and in this youth, whose globular head measures 23 inches in circumference, there remain, after seven years' training, but few indications of mental defect, save in the direction of moral imbecility. This girl, with a head measuring over 21 inches, is an useful worker in the dormitories.

We shall have no difficulty in finding cases wherein local and general indications of scrofula form the predominant characteristic. Here is a lad who has lost the sight of one eye from scrofulous ophthalmia, and we have numerous cases of scrofulous neck, with glands enlarged or discharging ; indeed, strumous ulcers, and affections of the joints and bones, form a considerable portion of our work at the Infirmary. "Perhaps two-thirds, or even more, of all idiots are of the scrofulous constitution," says Dr. Ireland ; but many of these may, of course, be ranged under other types. There remain, however, a considerable number whose history, personal and hereditary, points to scrofula as the main efficient cause of the mental condition. Coming to us, as they usually do, from the slums of large cities, it is surprising to see how soon many of these cases improve from the fresh air, cheerful surroundings, and good feeding, which they enjoy in this institution. About 20 per cent. of our admissions have a phthisical family history, and some form of scrofulous or phthisical disease accounts for two-thirds of our deaths.

There is a remarkable variety of imbecility, probably scrofulous in its essence, which has obtained from its physiognomical characters the name of the "Mongol" or "Kalmuc" type. We have numerous specimens of that type in this institution (perhaps 3 per cent. of its population) ; and you will notice in all a certain family resemblance, though they come from widely distant parts of our district. They all have a skin coarse in epidermis, if not furfuraceous ; many have sore eye-lids, some fissured lips ; but one of their most striking peculiarities is the state of the tongue, which is transversely fissured and has hypertrophied papillæ. Many of them have almond-shaped

eyes obliquely set; and this feature, with the squat nose and wiry hair, give the "Mongol" aspect whence they derive their name. My view is that they are, in fact, unfinished children, and that their peculiar appearance is really that of a phase of fœtal life. I do not mean that they are necessarily prematurely born, but some cause has depressed the maternal powers, and there has been a defect of formative force. It is remarkable that, in our experience, nearly half these children are the last born of a long family; and in more than one-third a phthisical history has been traced. They are generally delicate in body, and very susceptible to cold; mentally, they have good imitative powers, are often very fond of music, and dance and drill well. Comparatively few grow up to be men and women; and, as a rule, they die of phthisis before 20.

Under the heading of sensorial imbecility, we include those cases in which defects of sight or hearing (or both combined) occlude the avenues of instruction, and, when special modes of education are not adopted, mental obtuseness results. Such cases, if refused by blind or deaf-mute schools, often find their way into idiot asylums.

"Primarily neurotic" cases depend upon inherited instability of the nervous system, and are characterised by abnormal excitability. The senses and perceptions may be sharp enough, but there is a painful restlessness, an incapacity for sustained mental application, and often strange propensities for mischief and cruelty. Here is a boy, innocent-looking enough, who takes a sly pleasure in plucking the doves we keep in cages; and here a girl who tears her clothing without compunction, though punished for it; she says she will be good, and at the very same moment pinches her unoffending companions. Such cases of moral imbecility tend too often to insanity at puberty.

Paralytic and choreic cases may or may not be congenital. In the former class, the paralysis may be due to an actual gap in the brain (porencephalous defect), or it may be produced by some infantile accident or illness. My experience of such cases is, that much may be done by special modes of education in improving the intelligence, which is often masked by the imperfections of speech and facial distortions. Choreic movements are sometimes seen associated with these paralytic cases, and I show you two or three patients who exhibit that curious form of inco-ordination called "athetosis."

The form of cretinoid imbecility, a specimen of which I show you to-day, is that described by Hilton Fagge (and, I think, by Sir William Gull) under the name of sporadic cretinism. This girl, aged 16, is no more than three feet high; she has a grave old-fashioned look, a broad face, pug nose, pouting lips, and protruding tongue. Her skin is loose and baggy, as if too large for her bones; the belly is tumid, and her hands and feet are squat. She has no goître, but on each side one may feel some fulness above the clavicle, which Dr. Fletcher Beach's researches show to be fatty tumours. She can speak a word or two, but very slowly; and all her movements are characterised by the utmost deliberation. I may say that I have seen about half a dozen similar cases here and in other institutions; they have all been dwarfs, and look like children of one family. Those of you who have seen cases of myxœdema will note certain striking resemblances.

Cretinoid imbeciles with goître are not common in the district of this asylum (including, though it does, the dales of Yorkshire and valleys of Westmorland), and I cannot show you to-day a single characteristic example. Those of you who have visited Savoy, or the valley of the Rhone, will probably be familiar with the repulsive aspect of the victims of endemic cretinism.

Eclampsic cases are those resulting from severe teething-fits and infantile convulsions, as distinguished from true epilepsy. In 28 per cent. of our cases there is a history of convulsions, and in 20 per

cent. they are assigned as the cause of the imbecility. The prognosis, in these cases, is, as a rule, not very favourable; of course, varying with the degree of brain-lesion left by the fits.

Epilepsy is very frequently associated with idiocy; and even here, though our rules exclude confirmed epileptics, 10 per cent. of our patients suffer from more or less frequent fits. You will recognise, in some cases, the peculiar suffused look about the eyes characteristic of epilepsy; and with regard to these I may say that the result of training is not encouraging, for with the recurrence of fits they are apt to lose the knowledge they had acquired. I show you one case in which Dr. Alexander, of Liverpool, has tied the vertebral artery with at least temporary benefit; and others who, by the long continued administration of bromides, appear really to have lost the tendency to epilepsy; but my experience is that these improving cases form but a small minority.

Syphilitic cases are not so common, or, at any rate, not so commonly recognised, in idiot asylums, as might be expected. I can show you but one case in which the history points to syphilis; in this there are fissures about the mouth, but the teeth are not characteristic, though suggestive. Juvenile dementia, supervening at puberty, is probably more frequently the mental manifestation of syphilis than is original defect of intelligence; but possibly, as has been suggested—(see paper in *Brain*, April, 1883, by Dr. Judson Bury)—some of the cases of hydrocephalic imbecility may really be due to inherited syphilis. "Hutchinson's teeth" are, however, very rare in idiot asylums.

Postfebrile, or inflammatory cases, are those in which the mental defect has followed brain-affection, complicating the exanthemata, or resulting from the extension inwards of otitis. Speaking generally, the prognosis is not favourable in this class of cases, though, of course, depending upon the amount of damage which the brain has sustained. In some cases, irremediable lesion may have been left; in others, there has been merely an arrest of development from failing nutrition. With a neurotic family history, such cases may be classed as developmental; some, however, may properly be considered accidental.

Toxic idiocy is, in this country, chiefly associated with the administration to infants of opiates, which, under the name of "soothing syrups," are, unhappily, much in request with ignorant mothers. I show you the photograph of a lad, said to have been brought up from babyhood on porter instead of milk. Though physically well favoured, he had evident atrophy of his nervous centres.

Traumatic cases are those due to accident in early life affecting the head; and the earliest form of such injury is pressure in parturition. This, when unduly prolonged, may give rise to the asphyxia neonatorum, which is, no doubt, perilous to the integrity of the nervous system, giving rise to spastic rigidity and choreiform symptoms, even if it do not destroy the intelligence. Dr. Down states that, of 2,000 cases of idiocy examined by him, 20 were born with well marked symptoms of suspended animation. In 2.9 per cent. of our cases, prolonged labour, without instrumental interference, is the assigned cause; and in 2.6 per cent. forceps-delivery is also recorded. The judicious use of instruments will, in many cases, avert the terrible consequences of too prolonged pressure. We have three or four cases in which falls on the head at the moment of birth, the labour being unexpectedly rapid, have been assigned as the cause; and many in which falls from the arms of careless nurses are blamed. Falls down steps, kicks from horses, etc., are other common causes of traumatic imbecility, the character and prognosis of which vary very considerably according to the severity of the accident.

By emotional cases, I mean those resulting from nervous shock or fright at an early age. This lad, who, though aged 22, has still a nervous shrinking expression, was bitten by a dog in early life ; and this boy is said to have been all right till locked up in a dark closet at an infant school. Such cases improve under kind treatment, and the older of the two boys I have shown you is now an useful assistant in the stores.

As I have already said, while a certain percentage of cases may be definitely placed under one or other of the classes I have named, there are others (and perhaps the majority) in which the types, though traceable, are mingled together ; and these I include under the heading of mixed causes.

Time will not permit us to do more than glance at the pathology of the subject. As might be expected, feeble minds are usually associated with feeble bodies ; and the rate of mortality[5] in English idiot institutions is comparatively large. At the Royal Albert Asylum it has averaged 35 per 1,000 of its population during the fourteen years of its operations. Necropsies are always made when the consent of parents can be obtained ; and we have occasionally found, when least expected, extraordinary defects in brain-conformation. I show you a photograph (by Dr. Ferrier) of the encephalon of a girl who died last summer of phthisis, from which you will see that she had scarcely any cerebellum, though she did not display during life marked symptoms of ataxy. Here is a brain from a paralytic imbecile, in which you will notice the defect called porencephaly—that is, a gap extending in the place of the right frontal convolutions, and leaving the deeper structures of the brain quite uncovered. Of course, these "coarse lesions" are exceptional ; but microscopic examination will discover in many instances some abnormality of structure, such as the preponderance of simply formed brain-cells devoid of processes, denoting persistence of fœtal structures ; or, on the other hand, degenerative changes resulting from inflammatory atrophy.

I have already adverted to the numerous physical defects associated with imbecility. It may indeed be said that no idiot is physically sound ; of course, amongst imbeciles of a higher grade there may be less bodily infirmity. The ameliorative treatment of this class entirely depends upon the principle, strongly insisted on by Seguin, that physical must precede psychical improvement ; hence the importance of the skilled physician preceding, and indeed supervising, the operations of the schoolmaster. We have heard much lately of overpressure in elementary schools ; I need hardly say that schools for imbeciles must be so organised as to render any sort of overpressure impossible. The training of the senses, and the regulation of the muscular powers, accomplished in as attractive a manner as possible, form the stepping-stones to the more familiar forms of tuition, which, however, must be aided by objective demonstration as much as practicable. I am not without hope that some of the plans adopted in the instruction of the feeble-minded may furnish useful hints to those interested in the education of normal children in accordance with physiological principles. You will see, in your inspection of the building, lessons in actual progress, both in school and in workshops ; but I may direct your attention to the collection of school-appliances and educational and industrial work, for which a diploma of honour was awarded to this institution at the International Health Exhibition.

In conclusion, a few practical hints as to the mode of admission of children to this and other kindred institutions may be useful to you as medical practitioners. This is fundamentally a charity, and the

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[5] See paper by author on "Health and Developmen of Idiots," *Health Exhibition Literature*, vol. xi, p. 531.

majority of the inmates are elected by the subscribers; but we have also superior accommodation, and a separate boarding house, for payment cases. At present, every patient received here has to be certified precisely in the same form as is required for the admission of a lunatic to a lunatic asylum; that is, he must be described either as "an idiot" or as "a person of unsound mind." (The term "imbecile" is not statutory.) We think that the inclusion of such institutions as this—really training-schools for imbecile children—under the stringent provisions of the lunacy-laws is unfair, and often prejudicial to the educational interests of the feeble-minded; and it is probable that at no distant period an effort will be made to amend the law in this respect.

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