

to the fulfilment of their important duties. But I am ambitious to see them exercising their great and legitimate influence in their respective districts, by pointing out how mind depends on matter, and how insanity is but the expression of a faulty physical constitution, having its origin in causes which we may readily trace, and which are in a great measure under our control. There is much that is hopeful for the progress of the people in the present movement among the working classes for increased wages and shorter hours of labour, but until their sources of enjoyment have been extended by the wider cultivation of their intellectual and moral faculties, there is only too much reason to fear that increase of wages and increase of leisure, instead of promoting their higher civilization, will merely afford the means of increased indulgence to their animal propensities.

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*On the Classification and Prognosis of Idiocy.* By W. W. IRELAND, M.D., Medical Superintendent of the Scottish National Institution for the Education of Imbecile Children, Larbert by Falkirk.

(Read at a Quarterly Meeting of the Medico-Psychological Association, held at Glasgow, 9th May, 1872.)

*The Classification and Prognosis of Idiocy.*

There always must be some awkwardness about the classification of insanity. It is regarded as aberration of function of the nervous centres, the result of a number of nervous diseases. The physician who wishes to have a proper knowledge of insanity from a medical point of view must study the pathological conditions of which it is the symptom or the result, and when he has done so it is impossible for him to disconnect one series of observations from the other—the mental aberration from the accompanying disease of tissue or pathological symptoms. Insanity is, therefore, an irregular segment of a circle, of the totality of which it forms a part. It can neither be viewed alone nor can it, from its great importance, be regarded as merely a symptom of various nervous diseases, especially when most of these diseases may run their course without its manifestation. Thus we have

epileptic or paralytic insanity, although we may have epilepsy or paralysis without any lasting mental disorder.

At any rate it would be very inconvenient for us to want a classification of insanity founded upon pathology and etiology. Nor is it a fair objection to such classifications that they are in the present state of pathology imperfect, and in part, at least, likely to be swept away by the advance of pathology; for no one acquainted with the history of medicine will affirm that imperfect nosologies have been of no use. On the other hand it would be very inconvenient to dispense entirely with psychical divisions of insanity. The insane are deprived of their liberty and collected in Asylums on account of their psychical deficiencies and aberrations, and it is evident that the character of such deficiencies will always be important, both to society at large and to those who have the charge of them. If our classifications, psychical and pathological, approached completeness, they would bear an understood relation to one another. If we were to consider the deficiencies of an optical instrument like a microscope, we could describe them in two ways. We might say that objects were seen through it in colours which did not properly belong to them, or that their shapes were ill defined, or that they were seen dimly, with too little light. In this way we indicate the faults of the instrument by describing their effects upon the eye of the observer. On the other hand we could describe these faults directly; we could explain how, owing to imperfection in the shaping of the glasses, the lenses failed to bring all the rays of light into one focus, *i.e.*, spherical aberration; or that, owing to the nature of the glasses, unequal refraction of the rays took place, *i.e.*, chromatic aberration; or, owing to want of due transparency, or to the glasses being soiled, enough of light did not pass through. The one class of explanations would represent the psychical classification, the mind standing in the same relation to the organism as the eye does to the microscope. The other would represent the pathological classification. As our knowledge of the physiology of the brain is something very far behind our knowledge of the laws of light and optics, we are not nearly so successful in bringing the psychical and physiological systems into accord.

Idiocy and imbecility have usually been regarded by writers on insanity as pathological generalizations incapable of further sub-division. It is singular that those who object so strenuously to merely psychical divisions of insanity, such as

mania or melancholia, and have formed a classification founded upon pathology or etiology, should not have noticed that idiocy or imbecility are purely mental classifications; in short, that they are other names for psychical deficiency commencing in early life. Nevertheless, this mental deficiency comprehends cases quite distinct in their etiology, pathology, and treatment, which, however, unite to produce the deficiency of intellectual, nervous, and muscular power.

As the mental deficiency is the most serious of the symptoms and consequences of the diseased condition, it is of great importance that the degree of mental feebleness should be defined. Hence the necessity of psychical definitions such as the popular ones of idiot, imbecile, and feeble-minded, indicating three degrees of mental obtuseness, as well as the classification of Esquirol, founded upon the degree in which speech is exercised. Moreover, since it is impossible, from the other symptoms, to arrive at anything like an exact conclusion as to the extent of the diseased action, the mental faculties still spared are of great value in examining an idiot with a view to prognosis and treatment. At the same time any one who trusted to mental symptoms alone would fall into grievous errors; for example, it would be incorrect to give the same prognosis for an epileptic as for a traumatic idiot from the degree of intelligence left. In the one case we have an existing disease still likely to cause further mischief; in the other we have a lesion come and gone, whose unfortunate effects may be expected to diminish through time.

In short, all kinds of idiocy have not the same future, nor ought to be treated in the same way. To group them all together is as absurd as to go on measuring the heads of microcephalic and hydrocephalic idiots, and to generalize the results into one useless average.

The only way to prove the worth of our classification is to exhibit the general characteristics of the different groups of idiocy, and to show in what respect they differ from one another; and this, not wishing to trespass too long on your attention, I shall proceed at once to do.

Idiocy may be divided as a rudimentary arrangement into ten groups or classes:—

1. Hydrocephalic idiocy.
2. Eclampsic idiocy.
3. Epileptic idiocy.
4. Paralytic idiocy.
5. Inflammatory idiocy.

6. Traumatic idiocy.
7. Microcephalic idiocy.
8. Congenital idiocy.
9. Cretinism.
10. Idiocy by deprivation—that is, by the loss of two or more of the senses.

*Hydrocephalic Idiocy.*

I have collected twelve cases of hydrocephalic idiocy, in all of which the symptoms were very carefully studied. The head was generally enlarged, but in no case had a larger circumference than 24 inches (61 centimetres). In these cases the head, looked at from above, has the well-known shape of chronic hydrocephalus.

The occiput is sometimes flattened; but the palate is not vaulted, as is so common with congenital idiots. There is often dullness of touch, and deafness at one period or other of the disease is not an uncommon symptom. It was noted in four cases out of twelve (or in five out of fourteen, if we include two more doubtful cases), and in two of the cases hearing had returned.\* This deafness is probably owing to lateral expansion of the bones of the cranium, or the increase of fluid between the brain and meatus auditorius internus, causing stretching of the portio mollis.

In some cases in which hydrocephalus had been observed in infancy, the head was of the usual size for a child of the same age. In one case, which I saw at the Stirling District Asylum, the disease was only ascertained after death, the head being of normal size. Seven ounces of fluid were found in the lateral ventricles, and two ounces in the arachnoid. Apparently when the hydrocephalus ceases to progress, this class of idiots are left with a considerable capacity for improvement. Some have been taught to work, others to sew and read. The prognosis is graver when convulsions have supervened on the original malady. One patient who is recorded to have had fits at teething, which returned at four years old, and who has the hydrocephalic character of head, lost his hearing about two years ago. He has now been taught a number of figurative signs and also to spell on his fingers, and although he has the additional disadvantage of

\* On the connection between hydrocephalus and deafness, see "Diseases of the ear," by John Nottingham, Surgeon to the Southern Hospital, Consulting Surgeon to the Eye and Ear Institution, Liverpool. London, 1857, pp. 498-500.

obscurity of sight, having dimness of the cornea resulting from ophthalmia, his progress has been as well marked as that of any pupil in the establishment.

A few months ago I was introduced to the governess of a deaf and dumb school, who had a well-marked hydrocephalic head. She was quite deaf, but the nature of her duties is a sufficient proof that she had retained more than average mental vigour.

It will be readily believed that hydrocephalic idiots have got larger heads than other idiots, and, indeed, where the head appears to be unusually large, hydrocephalus may be shrewdly suspected. On the other hand, as already remarked, a normal, or even a small head, is no proof that hydrocephalus has not existed in infancy. Advancing chronic hydrocephalus may lead to total amentia without being directly fatal. Some instances of this kind are given by Esquirol, with his usual judgment in details and felicity of expression.\* On the other hand, a very large quantity of fluid can accumulate in cases of chronic hydrocephalus without destroying the functional power of the brain.† A case has been recorded by Monro of a boy of eight years old, who preserved his memory although the head measured 2 feet 4 inches in circumference. There is also the well-known case of Cardinal, who lived till 30 years. From seven to eight pints of water were found within the cranium, the brain being collected at the base of the skull.

#### *Eclampsic Idiocy.*

Under the head of Eclampsic are arranged those cases where idiocy has been the sequela of convulsions in early childhood, generally at teething. Convulsions at teething is one of the most frequent of the assigned causes of idiocy.‡

These convulsions may occur before teething, sometimes a

\* "Des Maladies Mentales," Tome Second, Paris, 1838, pp. 326-329.

† "Die Pathologie und Therapie der Gehirnkrankheiten von Dr. Rud. Leubuscher," Berlin, 1854, p. 402. Professor Albers, of Bonn, in a paper "Ueber Die mit Wasserkopf verbundene Irrenseinform" distinguishes two kinds of chronic hydrocephalus—one where the effusion is in the lateral ventricles, the other where it is in the arachnoid sac. Dr. Albers finds that mental obtuseness and paralysis are the distinctive symptoms of the one, restlessness and mental derangement are characteristic of the other. See the "Allgemeine Zeitschrift für Psychiatrie, Band" xxii., Berlin, 1865, p. 110.

‡ In a note which Dr. Shuttleworth, of the Royal Albert Asylum, made while Assistant-Physician at Earlswood, 14 per cent. of the cases of idiocy were ascribed as originating from convulsions at teething, injuries to the head at child-birth standing no higher than 6 per cent.

few days after birth, possibly owing to some injury to the head during labour. It even happens that they do not return with dentition. Although such eclamptic seizures are a common cause of idiocy, it would be a great mistake to imagine that they commonly cause idiocy. In the great majority of cases the convulsions pass away, leaving no trace of their occurrence upon the nervous system of the child. Thus, amongst a large number of children who had convulsions at teething only a few would be idiots; but amongst a number of idiots a considerable proportion would have convulsions at teething.

We may infer that there must be something unusual in the impressibility of the nervous system of the children who thus become idiotic. There is little doubt that they are born with a predisposition to take convulsions, which either manifests itself soon after birth, or waits the first exciting cause, and this generally is the commencement of dentition.

In one of the thirteen cases which we have collected the eldest brother was also idiotic, and from the same cause as the younger. As his father expressed it, he had one or two fits at every new tooth. The parents were cousins.

I do not here enter upon the question—What is the lesion which in these cases leaves idiocy behind?\*

Whatever it may be, the prognosis is bad. Though the power of muscular motion as well as the tactile sensibility is generally well preserved, and special sense does not appear to be injured, the intelligence is in a great degree destroyed, and the child remains, comparatively speaking, uneducable. He can be taught more readily to work than to think. Of the thirteen cases studied, six could be taught to work a little with their hands; in other things they were of comparatively inferior intelligence. In two the grasp was deficient. In one of these cases the pupil was prevented by imperfect power and sensibility in the hands from learning to work properly, though she was willing and docile, could learn to read a little, and possessed, comparatively speaking, a considerable amount of intelligence. Eight of our eclamptic cases were mutes, or nearly so, and three articulated imperfectly; thus, only two could speak correctly. But of these two one was a very educable case, a girl who was believed to have been born at the full time, and with neither difficulty nor accident. The fits occurred when she was six weeks old,

\* On this point, see "*Trousseau Clinique Medicale*," Tome ii., pp. 163-4.

and were accompanied with febrile action. Her life was despaired of, but the fits passed away entirely, and did not return with dentition. She was a weakly and delicate child, but is now healthy, strong, and active. She entered the institution at fourteen years of age (September, 1870). She made slow progress in learning to read, but great progress in learning to work. She can fill brushes quicker than any of the pupils, and is good at sewing, knitting, and household work. There has also been a great improvement in general intelligence.

#### *Epileptic Idiocy.*

Cases of idiocy complicated with epilepsy have appeared so little promising that they are excluded from the gratuitous benefits of all training schools both in Great Britain and America. At the same time this unfortunate class has found its advocates. Dr. W. A. F. Browne, in his lecture on *Epileptic Mania*, has the following suggestive remark:—"Deeply interested in this branch of our subject, and having observed that a high authority, M. Parchappe, declared that ten individuals had been discharged from Bicêtre recovered from idiocy, I some years ago proceeded to France to see and examine these creations of our art. My mission was unsuccessful. I could not trace these convalescents to the loom, the plough, or the vineyard; I could not obtain accurate information as to the amount of capacity and enlightenment attained. But it was not fruitless, for these researches brought to light what may be ranked as a discovery, that whatever the benefits conferred might be, the triumph had been achieved chiefly in the class of epileptic idiots; that certain of those discharged belonged to this class, and that the steps and *rationale* of the achievement consisted in the cure or removal, or mitigation of the epilepsy, and the subsequent evolution—whether spontaneous or artificial—matters little, of comparative lucidity and educability. It is unnecessary to insist upon this additional illustration of idiocy being a disease which is to be cured, not merely an embryo faculty to be developed. You can understand why, on finding corroboration of these observations in this country, I have since held the heresy that epileptic idiots are as favourable subjects for training as other idiots, if not more so.\*

For my part, while allowing great weight to the judgment

\* "Journal of Mental Science," vol. xi., p. 352.

and experience of Dr. Browne, I should like very decided evidence that eccentric or sympathetic irritation of a removable character exciting epilepsy becomes the cause of idiocy or imbecility in a sufficient proportion of cases to warrant our regarding a cure of the epilepsy with subsequent cure or removal of the idiocy as an occurrence within the bounds of reasonable probability. Whatever may be the cause of the epilepsy, its association with idiocy leads, in my mind, to the presumption that a lesion has been produced in the brain and spinal cord not likely ever to be effaced.

Dr. Wilbur,\* the Medical Superintendent of the New York School for Idiots, at Syracuse, who is deservedly an authority on such points, remarks:—

“In certain classes of cases, however, there will not be much difficulty in deciding to exclude the parties for whose admission to the asylum application is made.

“Cases of idiocy accompanied with confirmed epilepsy are to be reckoned among these. The presence of the two conjoined (which ever manifestation precedes the other) usually indicates the existence of a common cause in organic disease of the brain or spinal cord. In such instances the epilepsy is generally incurable. Each recurring paroxysm impairs the more the intellectual faculties, till complete dementia and death are the result. Even when in the intervals between the convulsions a marked improvement in all respects has rewarded the persistent efforts of training and instruction, a single recurrence of the disease will destroy the labour of months. Under such circumstances, an institution offers no very essential advantages over a home, and its accommodations should be reserved for those who can be radically benefited.”

Dr. Isaac Kerlin,† who has treated a considerable number of epileptic cases, 111 out of 500 idiots, claims to have had 16 cures and 57 cases improved. Although the rules of his institution forbid the admission of an epileptic patient on the beneficiary list, Dr. Kerlin thus argues in favour of their being taken on trial:—

“But the argument of positive deterioration of the epileptic imbecile is no longer true. Seguin, the close observer and kind physician, cites a case of profound idiocy, complicated with epilepsy, in which the motor disorders and nervous irri-

\* Ninth Annual Report, 1860, p. 11.

† “Fourteenth Annual Report of the Pennsylvania Training School for Feeble-minded Children,” 1867, p. 15.

tability were so regularised by sharp training that in the sixth month the daily attacks of epilepsy entirely left him, and from *idiot* he grew to be *imbecile*; while several cases of corresponding improvement in our own family must serve to change our opinion and practice in relation to epilepsy."

I do not deny the possibility of the cure of an epileptic case; that is, the cessation of the fits, whether of ordinary epilepsy or of epileptic vertigo, which, however, is not always accompanied by an improvement in the mental vigour; but it would be desirable to know the proportion of the number of recoveries to the number of cases. If this proportion were very low—say one or two per cent.—the consequence would be that we might admit a hundred pupils, and only one or two derive benefit, while the institution would have to struggle with 99 or 98 unimproving cases, exhibiting all the distressing symptoms of epilepsy, combined with mental deficiency or alienation. In our own experience, while the epileptic cases generally present a certain fallacious amount of intelligence, this intelligence does not seem to be much improved by training. If during the intervals between their epileptic seizures they learn anything, a new attack is apt to erase it from their memory. They are generally wild and intractable, and, indeed, seem to be on the boundary between imbecility and insanity. Whatever the reason may be, I have been very little satisfied by my attempts to treat the *status epilepticus* by diet and medicine. In four cases out of twelve the tactile sensibility was found to be deficient.

The following cases may be shortly referred to as examples:—

K. C.—Epilepsy, said to have been caused by fright when seven years of age. Admitted at the age of 14, and although it was asserted, in order to secure her gratuitous admission, that the fits had ceased, the unfortunate girl had all the marks of a confirmed epileptic. A piece of her tongue had been bitten away, and she had some scars of severe burns. She was short of stature, 3ft. 7½ins. in height, but broad and square, like a Lapp woman. She weighed 62 lbs. A great many therapeutic means were tried, such as bromide of potassium, belladonna, nitrate of silver, and spinal ice bags. After a fortnight the number of the fits diminished, but the improvement soon passed away. The fits, which were never very severe nor long continued, began again to recur four or five times every day, sometimes as often as ten or twelve times. After six months' stay in the sick room she was dis-

missed as an unfit case. Her intellect had become duller, her habits degenerated, and she had lost three pounds in weight.

B. C., aged 9.—There are often considerable intervals, sometimes as much as three or four months, between the fits. He is always dull and heavy for several days afterwards. His memory is very fugitive, and though an amiable, talkative child, he learns very little. He seems to want the abstract idea of number.

B. D., aged 16.—Fits occur at rare intervals; believed sometimes to pass four or five months without a fit. General health good. He is not at all educable, and is difficult to influence or manage; but is observant, and makes odd and eccentric remarks. He is slow of apprehension and of utterance. General health good. Touch and sensibility to pain deficient.

B. H., aged 11.—Not recorded when convulsions came on, but takes fits now and then. Sensibility deficient over whole body; perhaps normal in head and face; he uses tongue and lips instead of fingers in feeling; dashes his hand on the wall; mute; violent; bites his hand and knocks his head when angry; apt to wander (possibly a congenital idiot).

J. Q., aged 11, a mute, but with enough of intelligence to be classed as an asymmetrical mute, very strong and active, difficult to manage; tears clothes occasionally, small of her age. Considerably improved, had shown no epileptic fits for two years, but had some very severe attacks two days before leaving the Institution.

B. D., aged 10.—Father's sister insane; sister died of convulsions at teething; began to walk at three years; fits not noticed till six; has epileptic vertigo frequently, for which he has been treated for nearly a year. Six months in Institution, believed to be improving.

N. C., aged 24.—Has been seven years in the establishment; is almost totally deaf; had fits up to 10 years of age which have now entirely ceased; very much improved; can speak on her fingers; can knit, sew, do household work, reads and writes, reads books of her own accord; entirely passed out of the state of imbecility. This would be a more encouraging case if the degree of imbecility in which the girl entered the Institution was more precisely ascertained. †It appears from the case book that she could read and spell on her fingers, and had gone through the full training at a deaf and dumb school. On the other hand, her father was intemperate, her

mother had three strokes of paralysis (though after the birth of N. C.). The girl was observed to be imbecile from birth; only began to walk at five years. On admission was noted to have "legs weak, subparalytic," and to be incapable of any useful occupation. There is, therefore, no reasonable doubt that she has much improved in intelligence. The fits have ceased, and the weakness of the legs quite disappeared.

#### *Paralytic Idiocy.*

As the rules of an Institution like ours are unfavourable to the admission of children who require much attendance, and as the parents of those who are able to pay for their board are often unwilling to commit children in the state of helplessness following paralysis to the care of strangers, few of this class have as yet come under my notice. I can only produce six cases, two from the case-book, and four from our own observation. As far as this short observation goes, cases of paralytic idiocy improve mentally rather than physically, just as after an apoplectic shock, in which the intellect and powers of sensation and motion are impaired, the mental deficiency more readily disappears than the paralysis of sensation and motion. Of the six cases, three were out of doors; one, a girl of nine years of age, was paralytic. She was improving mentally, but the paralysis remained unchanged; the second was hemiplegic, the paralysis rather getting worse, but the mind getting brighter. The paralysis in the former case had been caused by a fall when three years of age.

The second, a girl of seven years of age, had paralysis complicated with fits. The third case was a boy of nine years; the paralytic affection was supposed to have occurred in the second year of infancy. There was a considerable diminution of muscular power and sensibility in the right arm and leg. At the same time the child became nearly blind. The visual deficiency so far passed away as to allow him to distinguish two grains of barley when placed side by side on a dark-coloured table.

This boy was taken on trial for a quarter at a blind school, and the following entry put opposite his name:—"Disposition on the whole quiet and tractable. Aptitude for learning all but wholly wanting. Seems imbecile to a considerable extent."

Of the three cases in the house, one a boy of eight, on admission, was deaf as well as partially paraplegic in the legs.

He could walk with difficulty. He improved considerably in general intelligence, and learned to write well enough to imitate striking peculiarities in other people's handwriting, also to sew and knit. He died of anasarca following scarlet fever, after being two years in the house.

The fourth was a very feeble child, aged nine, who was stated to have been twice severely ill from threatened water in the head in infancy, and to have had one side weak but now equal. His father had paraplegia, his mother was weakly and nervous. He died of gastric fever, having been five months in the house. No progress was observed.

The fifth was a boy of eleven; hemiplegia believed to date from eighth month; half of tongue, uvula and soft palate, paralysed on right side, and arm and leg partially paralysed on left; sensibility as well as motion diminished; articulation deficient, cannot pronounce the letter K.

The grasp in left hand is slowly returning, and he is learning to read and write. He is extremely willing and anxious to learn, and his progress has been most gratifying. This is the only case in the house which has come under my direct observation. The other two are from the case-book.

#### *Inflammatory Idiocy.*

Inflammations of the mucous membrane of the nose and ears sometimes occur after scarlet fever, measles, and typhus, and these are the most common causes of deafness which is not congenital. Sloughing of the internal ear sometimes extends through the petrous portion of the temporal bone, causing inflammation of the membranes, and even abscess of the brain itself. Such lesions are generally fatal, and I have met with few cases of idiocy which could be plainly traced to inflammation of the encephalon not caused by external injury. There are only four such examples in our case-book,—one of which may be set apart as doubtful; the second of these, a girl of twelve, had brain fever at the age of eight years, with sloughing of the internal ears, producing deafness. This was regarded by her family as the cause of idiocy. She, however, was always peculiar, and did not begin to walk till two-and-a-half years old, though she began to speak at twelve months. Her father's brother had been imbecile.

Another case: a boy aged ten began to speak at twelve months, and to talk at eighteen months. He is recorded to

have had brain fever, with fits, when three years old. The position of the teeth is irregular. This case is an improving one in many respects. He possesses all his senses and normal sensibility; he is learning to read and write a little.

In another case of brain fever, with epileptic fits, occurring at the age of twelve, in a patient previously of good intelligence, the injury to the faculty of expression was greater than in that of conception. The patient was too old to allow her to be classed as a case of idiocy. It will be seen that the number of cases is too few to base any prognosis upon them.

#### *Traumatic Idiocy.*

Of course the degree and nature of idiocy arising from wounds in the head must vary with the amount of destruction of the nervous tissue. In military surgery the prognosis of wounds of the same part would naturally vary with the nature of the instrument which caused them—for example, the arm being carried away by a round shot would be a much graver injury than if it were cut off by a sabre; but injuries to the head causing idiocy happen in so great a variety of ways, and by so great a variety of instruments, that they are not even susceptible of this rude species of generalization. We have to do with injuries to the unborn child by attempts to procure abortion,\* as well as injuries during labour by abnormal narrowness of the pelvis and the use of forceps; we have to deal with concussion as well as compression, hæmorrhages from the meninges as well as destruction to the grey or the white matter of the brain. Sometimes the injury to the mental power is permanent, sometimes it disappears more or less slowly; in some cases a trifling injury causes grave disorder, in others what appear to be a great injury leaves no visible effects behind. Hereditary predisposition has, no doubt, much to do with this. Some tribes in South America flatten the heads of their children in a monstrous manner, and it is confidently stated† that the survivors who have been subjected to this prolonged process of deformation are not inferior in intelligence to neighbouring tribes who leave the heads of their children to grow in the natural way.

\* Dr. Howe traced idiocy to this cause in at least seven cases out of four hundred ("Causes of Idiocy," p. 35). Such attempts are not so common in this country as in the United States.

† The West Riding Lunatic Asylum Reports, edited by J. Crichton Browne, M.D., F.R.S.E. London, 1871, p. 3.

Injuries to the head at birth are often assigned as causes of idiocy; yet the head of the child is not unfrequently subjected to severe compression or injury causing alteration of its shape, and this in the great majority of cases does not lead to such unfortunate results. Nevertheless, in a certain proportion of cases, probably under the influence of constitutional tendencies, such injuries become the proximate causes of idiocy.

It seems likely that the larger size of the head of the male infant, which renders it more liable to compression and injury at parturition, as shown by Sir James Simpson, is the cause of the higher mortality of male children during the first year of life, and especially of their greater liability to diseases of the brain.

“According to Prof. Faye,” says Darwin in his “Descent of Man,”\* “for every 100 still-born females we have in several counties from 134·6 to 144·9 still-born males. Moreover, during the first four or five years of life more male children die than females; for example, during the first year 126 boys die for every 100 girls—a proportion which in France is still more unfavourable.”

“Diseases of the nervous system,” observes Dr. Farre in the Registrar-General’s Second Annual Report, “are 23 per cent. more fatal to males than females, the chief difference arising from the diseases which affect children.” “At almost every stage of life,” says Dr. Stark, the Registrar-General for Scotland, “the males in Scotland have a greater liability to death and a higher death-rate than the females. The fact, however, of this peculiarity being most strongly developed at that infantile period of life when the dress, food, and general treatment of both sexes are alike, seems to prove that the higher male death-rate is an impressed natural peculiarity due to sex alone.”†

It has been occasionally noticed that idiocy is more common with males than with females, though even those well acquainted with the subject have not as yet recognised this as a general truth, nor, indeed, is it easy to prove it to be so, for the statistics of idiocy, drawn from the census of different countries, are manifestly imperfect, owing to the reluctance of parents to return their children under such a heading. In the census for 1861 only 481 imbeciles were returned for all Scotland—279 males and 202 females, yet much about the

\* Vol. i., p. 302.

† Tenth Annual Report of Births, &c., in Scotland, 1867, p. xxviii., quoted by Darwin.

same time Dr. W. A. F. Browne had a list of 2236 idiots and imbeciles either visited by himself or by medical men upon whom he could rely, "irrespective of those cases which are confined in lunatic asylums and workhouses, which are not necessarily returned as idiot, and are generally confounded with the mass of the insane." Of these 1220 were males and 1016 females.

The twenty-second report of the Earlswood Asylum for Idiots, for the year 1869, gives a return of 316 males and 162 females; that of Essex Hall, Colchester, for 1871, shows 64 males with but 30 females. In the Albert Asylum, Lancaster, the wing for the boys is made one-third larger than that for the girls. In Baldovan Asylum, in 1871, there were 27 boys and 11 girls. In Larbert, though with the view of equalising the number of males and females, the preference was sometimes given to female candidates, in 1871 the numbers stood 43 males and 30 females. There are now 50 males and 33 females.

In the returns of idiots from district asylums in Scotland, where the sexes are given, we find 113 males, and only 91 females. It will be noted that in all these figures the proportion of males is higher than that of females.

In the fourteenth annual report of the Pennsylvania Training School for Feeble-minded Children Dr. Kerlin remarks, "92 are males and 64 are females; this proportion of sex among imbeciles having held during the history of this institution, and is sustained by more aggregated statistics of State Commissioners." In the statistics of the Duchy of Brunswick, for 1868, where the male and female population are nearly equal (151,213 males to 151,588 females) the number of male idiots was 250, or 1 in 605; of female idiots 225, or 1 in 674 of the general population. It is probably this greater liability of the male to suffer from diseases of the brain which renders him more liable to deafness. "It is a fact," writes Mr. David Buxton,\* Principal of Liverpool Deaf and Dumb School, "that the majority of children who enter our institutions, having lost their hearing from disease, are males."

Of 2962 instances, says Mr. Wilde,† of uncomplicated congenital muteism, 2512 cases were cases of single mutes in each family, the sexes being in the proportion of 100 males

\* See his "Inquiry into the Causes of Deaf-Dumbness," originally published in the "Liverpool Medico-Chirurgical Journal," January, 1859.

† See the interesting Appendix upon Deaf-Dumbness in "Practical Observations on Aural Surgery and the Nature and Treatment of Diseases of the Ear," by William R. Wilde, F.R.C.S.I., &c., London, 1853, pp. 470, 471.

to 73 females, and of these by far the greater proportion were first children."

It would be difficult to find any other explanation of this than that the first labour being generally the most severe, the head of the child is more liable to receive injury. "It is remarkable," says the same writer, "that while the male sex largely predominated in all other instances, the sexes of mutes were equal in 84 instances in which the eighth child was born deaf and dumb."

But while it appears probable that one cause of the superior number of male over female idiots is owing to the greater liability of the male head to injuries at birth, it is possible that there may be yet another cause of a much more obscure character. It has been asserted that congenital malformations, leaving injuries to the head at birth out of view, are more common with male children than with female. This appears to be the case at least in those parts whose organization is more complex.\* As a general rule a higher elaboration and a larger amount of plastic material is required for the formation of the male organism. And the greater the demand upon the productive power of the mother, the more likely a failure in the formation of some of the parts in the child.

In cases of deaf-dumbness supposed to be congenital, it sometimes happens that in one family the boys are affected, the girls entirely escaping.† This not unfrequently happens with congenital idiots. Sometimes, though more rarely, all the male children escape, and several or all of the female children are born deaf. There is one instance recorded in our case-book where there were in a family three imbecile sisters out of six, and four brothers who were of sound mind, but their ages and order in family are not given.

The following case is most probably of traumatic origin:—  
K. N., aged 13; head small, narrowing towards vertex.‡ He

\* See the Papers of Dr. A. Duncan, "Edinburgh Medical and Surgical Journal," 1805, vol. ii., pp. 43-132.

† See "Edinburgh Medical and Surgical Journal," 1811, vol. vii., p. 62, and Wilde ut cit.

‡ Measurements of head taken in inches.

Antero-posterior	. . .	10½ in. = 26½ c.
Circumference	. . .	18½ in. = 47.
Transverse	. . .	11 in. = 27½.
		107½ c.
From tragus to middle of forehead		4½ inch 11½ c.
From tragus to middle of occipital tuberosity		4 inch 10 c.

was the first child; mother 16 years old at his birth. Born at full time, and delivered with forceps. The marks of forceps were still visible on right temple, where there was a spot destitute of hair. The infant could not suck for the first week. He had three fits a short time after birth, and a great many more when three months old. Has had no fits for three years. He began to walk at two years; can only speak a few words, but understands to a limited extent what is said to him; knows he can get something for money; use of hands deficient; good natured; apparently healthy.

The mother, a healthy-looking Irishwoman, had five other children, all delivered by the forceps. They are all healthy, and said to be of average intelligence.

In this case it would seem as if the injury at birth had caused fits and obstructed the nutrition of the brain, so that it remained no larger than that of a child a year old. His head is smaller than any in the Larbert Institution.

#### *Microcephalic Idiocy.*

It is a common assertion in scientific books that the size of the head of the idiot is abnormally small. Even in a sober, exact book, like "Quain's Anatomy,"\* we meet with such sweeping assertions as these:—"The brain of Cuvier weighed upwards of 64oz., and that of the late Dr. Abercrombie about 63oz., avoirdupois. On the other hand, the brain in idiots is remarkably small. In three idiots, whose ages were 16, 40, and 50 years, Tiedemann found the weight of their respective brains to be 19½oz., 25½oz., and 22½oz., and Dr. Sims records the case of a female idiot, 12 years old, whose brain weighed 27oz."

No doubt these individual weights and measurements are correct, but to found a general statement upon a few such cases is entirely misleading. In a recent paper upon the weight of the brain † in insanity we are told that the weight of the brain of an imbecile, aged 75, weighed 63 oz. 4 drachms, that is, heavier than Dr. Abercrombie's. On this subject Dr. S. G. Howe remarks, "Idiocy is sometimes caused by the smallness of the brain; indeed, the true *type* of the lowest class of idiots is a person whose brain is too small to perform its functions normally. The common notion, however, that this is generally the cause of idiocy is incorrect.

\* "Quain's Anatomy, 1856," vol. ii., p. 432.

† "Edinburgh Medical Journal," March, 1872.

Out of 338 cases, the measurement of which is given by the Massachusetts Commissioners, only 99 had diminutive brains. Amongst our boys only two have very diminutive brains."

It is likely enough, as Esquirol has stated, that the average size of the heads of idiots, even setting aside microcephalics, is less than the average size of those of ordinary people; but an indication like this is of no value in prognosis. It is only when the head is unusually large, as in chronic hydrocephalus, or unusually small, as in microcephalus, that the measuring tape is of use.

In small-headed idiots, if the brain be healthy, the prognosis is not so bad as might be supposed. Such cases improve under training, and have more physical and moral energy than is common with idiots of other classes.

Dr. Wilbur, in his Report of the New York State Idiot Asylum for 1857, speaks of a boy 12 years old, rather small of his age, his head is smaller than any whose dimensions I have seen recorded; the greatest circumference of his cranium is only 13½ inches; "he was not cleanly in his habits, had but little idea of language, was passionate, could not speak at all; he has now been under instruction a year, he can distinguish a variety of forms and colours, he knows the name of all objects in the schoolroom and about the house, and also the names of all the pupils in school; he recognises a great number of pictures of objects; he is beginning to speak, and has already learned several printed words as the representatives of familiar objects; he is now making sensible progress every day."

In the Eleventh Annual Report for 1862 there is an account of the further progress of the same pupil, "a boy whose head was exceedingly small—in fact, smaller than any on record, except those of the Aztec children. He was in the asylum for five years, improving in many respects, but the extent of his further progress was so limited that he was dismissed." At Earlswood, amongst more than 500 inmates, I asked in vain for a microcephalic idiot with a circumference of head under 18 inches, but I found one at Lancaster, whom, through the kindness of the Superintendent,\* I was allowed

\* It would appear, from the remarks of Dr. Shuttleworth, that there were at that time three microcephalic idiots at Earlswood, one of whom I saw. Unless my memory much deceives me, the circumference of her head was fully 18 inches, but being of a tapering or cone-shaped form the brain was smaller than such a circumference would imply in a head of normal roundness. Dr. Shuttleworth described her as being a girl of more than usual energy, very determined to have her own way, and at 15 years of age not behind the ordinary intelligence of a girl of 12.

to examine. The circumference of his head was  $14\frac{1}{8}$  inch = 36 centimetres. The measurements of the head of the Lancaster microcephale were—

	inches.	Centimetres (about).
Antero-posterior... ..	$7\frac{1}{8}$	$19\frac{1}{2}$
Circumference ... ..	$14\frac{1}{8}$	36
Transverse ... ..	$9\frac{1}{8}$	25
		$80\frac{1}{2}$
From external meatus of ear to middle of forehead ... ..	$4\frac{1}{8}$	$10\frac{1}{2}$
From meatus to middle of occiput ...	4	10

There was nothing very peculiar about the form of the head. He was a healthy and well-made child, with good teeth and small hands and feet, but little for his age, which was eight years.

He was quarrelsome and unmanageable, biting and kicking when angry. If his nurse pretended to cry when he struck her, he would appear sorry. She thought him the most intelligent child among eight idiots of about his own age. If the other children struck him he would fly at them. He was imitative, but inclined to steal; when caught stealing he seemed ashamed and turned red.

Dr. Howe gives the average circumference of the head as 22 inches, about 56 centimetres. This, surely, is too high. The smallest head which has come under my observation in the Larbert Institution is that of a boy aged 16. The circumference is 47 centimetres =  $18\frac{1}{2}$  inches; antero-posterior measurement 29c. =  $11\frac{1}{2}$  in.; transverse = 20c. combined, 106c. Apparently he has been affected with constitutional disease, but is now healthy. He is an asymmetrical mute, a ready mimic, and an expert thief; can use his hands well, and is observant and intelligent in many things.

#### *Congenital Idiocy.*

As in congenital idiocy the diseased condition entailing deficient mental manifestation is complete before birth, the presumption of a hereditary connection is stronger than in other forms. If the family history be known there are often parents, aunts, or uncles who have been insane, imbecile, epileptic, or deaf. Sometimes the congenital idiot is the youngest child of a large family, especially when the parents are advanced in life; sometimes he is a child prematurely born. Constitutional diseases are common amongst con-

genital idiots, especially scrofula, syphilis, and rickets. The circulation is often feeble; the limbs, especially the lower ones, are cold. Such patients are subject to chilblains; sensibility is deficient; they allow their shoes to gall their feet, till ulcers are produced, which are very slow of healing. Deformities are common among congenital idiots, especially a highly vaulted palate, teeth irregularly placed and subject to decay, especially on the upper jaw, deficient growth of the finger nails, clubbed or wad-shaped fingers, clubbed feet, squinting, and rolling of the eyes. Other malformations are revealed by dissection—deficiencies of the valves of the heart, cyanosis, abnormal distribution of the blood vessels, lobulated form of the kidneys as well as abnormalities in the brain. In idiots the back of the head is often flat; but this is not peculiar to any forms of idiocy, and is as often absent as present. I am not aware of any particular form of the head common to this form of idiocy.

Congenital idiots are seldom well made; often dwarfish; put themselves into strange postures, which may be confirmed by habit into deformities. No doubt the condition of the fluids is often deficient; and we must look for an explanation of the idiotic condition not only in the structure of the brain, but in the relation of the blood to the brain. When the general health becomes stronger the patient turns brighter, more noticing, and improves under teaching. What has been named spurious hydrocephalus, or hydrocephaloid, which is indicated by drowsiness or stupor without fever and with depressed fontanelle, is an illustration of deficient function of the brain without organic disease, dependent on poor blood supply. It occurs in ill-fed, neglected children, and often attends the close of chronic vomiting. Sometimes it disappears very quickly.

It would be difficult to generalise the variations from the natural type which occur amongst congenital idiots. They may, perhaps, be divided into two classes—those which appear to result from arrested development, and those which appear to result from diseased growth. I am well aware that it is not sufficient to assert that a deficiency in function is owing to arrested development. One ought to be able by dissection to shew the connection between the rudimentary organs in the idiot and the different stages of embryonic life, and this has not yet been done, though a number of facts seem to bear out the view that it is capable of scientific demonstration. It may be said that the definition of con-

genital idiocy is a mere residuum of conditions occurring before birth, which, from the obscurity of the investigation, have escaped analysis or classification; congenital idiots may have water in the head, or crania abnormally small, or have a liability to fits, and thus be reclaimed as hydrocephalics, microcephalics, or eclampsics.

In looking over a list of 64, tabulated as congenital idiots, it is clear that the mere fact of their being in this class will not guide us much in our prognosis. The list comprises some of the worst and some of the most improvable cases, solitary idiots as well as imbecile and feeble-minded children. We must therefore have recourse, in a great degree, to those general tests, which are also of use in examining other kinds of idiocy. We ought, by carefully put questions, to ascertain the amount of intelligence existing, the degree to which speech is exercised, the knowledge of number possessed by the child, as well as the power of attention and of memory. It is a bad sign when the grasp is loose, or readily relaxed, when the eye cannot be fixed, and when there are automatic motions. The power of muscular motion, as shown in walking over the floor or across a plank, or in better cases, of carrying a vessel full of water, is a surer test than that of tactile sensibility. Congenital idiots of the lower type are often very deficient in these respects. It is rare that cases where the circulation remains torpid, as indicated by feeble pulse, cold feet or hands, or other signs, make much progress in education and training. On the contrary, the prognosis is good where the child is active and vigorous, noticing things, where he has begun to speak before six or seven, and has got a firm grasp, and a normal amount of tactile sensibility, and the faculty of attention capable of being sustained. Most idiots seem to take up the idea of number with great difficulty; but this test is more useful in diagnosis than prognosis.

It is common enough for parents to found hopes upon their children having a good ear for music; but this seems a gift common to all kinds and degrees of idiots. Mimicry and a sense of the ludicrous indicate a certain amount of intelligence, though perhaps not so much as might be supposed. There are some idiots who can be taught to work very tolerably, who can never be taught to read; and others, who can be taught to read and write, who can never be proficient at work. Special faculties are sometimes preserved in a wonderful degree. Naturally these cases are brought prominently before the public in the annual reports of the Institutions in

which they are educated, so there is the less excuse for me to enlarge upon them.

*Idiocy by Deprivation.*

Idiocy by deprivation means that condition of mind in which a child remains who is deprived of two or more of the principal senses—such as sight and hearing. Of this character are the cases of James Mitchell, who was born deaf and blind, but whose eyesight was restored by being couched for cataract; of Laura Bridgman, blind and deaf, and with the senses of smell and taste much impaired, who was taught to communicate through the sense of feeling; and of Meystre, blind and deaf, who was taught in addition to speak a little.\*

I have heard accounts of several other children, both deaf and blind, who have been taught to read by means of embossed letters, such as are used for the blind, and thus a limited amount of information can be conveyed. It, however, requires a considerable amount both of tactile sensibility and of mental power to learn to read in this manner, as any one will admit who tries to make out even the easiest letters, such as O or I, by feeling alone. Such cases, therefore, if they belong to idiocy at all, are easily separable from the other groups; and much progress in teaching can scarcely be expected without good original ability, and a great deal of pains bestowed upon them.

Helvetius argued that one great cause of the superiority of man, and of one animal over another, lay in the tactile and prehensile power of the hands or other organs. The fallacy of such notions was ingeniously shown by Frederick Cuvier, who pointed out that the seal was an animal of wonderful sagacity, though unusually deficient in organs fitted for feeling or grasping.

Deficiency of sight and hearing is not uncommon with idiots, and forms a very serious bar to instruction. In one case already referred to, a boy who was sinking into an extremely obtuse condition, from having become deaf and dim of sight, had his mental powers and faculty of expression aroused by being taught figurative signs, and to spell on his fingers.

\* See an account of these cases in the work "On Aural Surgery," by William E. Wilde, already quoted, pp. 476-480.