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THE PHYSICAL FEATURES OF IDIOCY,<sup>1</sup> IN RELATION TO CLASSIFICATION AND PROGNOSIS. By G. E. SHUTTLEWORTH, B.A., M.D., &c., *Medical Superintendent, Royal Albert Asylum, Lancaster.*

IN the official Nomenclature of Diseases, Idiocy and Imbecility are classed as congenital varieties of disorders of the intellect, and ranged under the general heading of diseases of the nervous system. To the busy practitioner such a description may seem to afford almost as much information as may suffice for his infrequent dealings with a somewhat recondite subject. It will be my endeavour in this paper to show that some knowledge of the salient features of these infirmities will be of practical as well as of pathological interest, and with this object I propose to call attention more especially to the physical characters which are associated with the principal types into which idiots and imbeciles may be divided.

As in insanity, so also with regard to idiocy, the basis of all improvement in treatment has been a more precise comprehension of the physiological and pathological conditions underlying the abnormal mental phenomena. So long as the manifestations of mind were regarded as matters apart from the domain of physical science, there was but little prospect of progress in modes of amelioration of patients suffering from disordered or defective intellect. It was not, indeed, until physiology had furnished a key to the mysteries of nervous action—mysteries in which it may even now be said that those most advanced are still but novices—that the essential nature of idiocy could be understood.

More than this, idiocy is in many, if not in most, cases not merely an affair of the nervous system, but a profound affection of the whole organism. We shall find, consequently, abnormalities of structure and function showing themselves in the several systems of animal and vegetative life, as well as in the brain, spinal cord, and nerves. To a considerable extent, indeed, the

<sup>1</sup> The substance of a paper read before the Manchester Medical Society, December 1881.

constant concomitance of certain physical conditions with special mental characteristics will enable us to divide cases of idiocy into typical groups.

Before proceeding to consider the subdivisions of the subject, it may be well to give a general definition of the terms idiocy and imbecility. Both terms are used to designate "mental deficiency, depending upon imperfect development, or disease, of the nervous system, dating from birth, or from early infancy, previous to the evolution of the mental faculties." Whilst idiocy denotes the graver degrees of such mental defect, imbecility is the name applied to its milder forms. The term imbecility is no longer exclusively applied—at least by English writers—to *non-congenital* forms of mental defect supervening in childhood, and, on the other hand, its employment as an equivalent for *dementia* (failure of mental power in more advanced life) is much to be deprecated. Unfortunately, the loose use of the terms *imbecile* and *imbecility* in the census and other official returns detracts somewhat from the value of the national statistics with regard to the subject before us. Thus, in the census of 1871, 29,452 persons (14,728 males and 14,724 females) were returned in the schedules for England and Wales as "idiots and imbeciles," being in the ratio of 1:771 of the population. Of these, however, no less than 4142 were aged 60 years and upwards, of whom a large proportion may reasonably be presumed to have been *demented* persons. On the other hand, only 428 children under 5 years were returned under this head, owing, no doubt, to the natural reluctance of parents to acknowledge in an official document the mental infirmity of their offspring. It is probable, therefore, that the total of 29,452 returned in the census as idiots and imbeciles is in fact below the true number. In the seven northern counties of England (from which the patients of the Royal Albert Asylum are drawn) the total number is returned as 8104,<sup>1</sup> being at the rate of 1:888 of the population. I may add that my own statistics are based upon what is known of the

<sup>1</sup> The complete census returns for 1881 have not yet appeared, but they will show that the number of idiots and imbeciles in the northern counties amounts to 8764.

history of some 800 cases who have been under my care at the above-named institution, reference being also made to notes of other 540 cases which were under my observation when I was assistant medical officer at Earlswood.

There are certain general observations which may be made with regard to the physical characteristics of the whole class of idiots and imbeciles. One is that, as a rule, especially amongst congenital cases, the body, as well as the mind, is dwarfed. I am indebted to Mr. Charles Roberts, F.R.C.S. (author of a well-known work on Anthropometry<sup>1</sup>), for a table and chart, which shows that British male idiots are shorter than the general population:—

At 5 years, by 1 inch.

At 10 years, by 2 inches.

At 15 years, by 3 inches.

At 20 years, by 3 inches.

Whilst as regards weight, male idiots are lighter than the general population:—

At 8 years, by 4½ lbs.

At 10 years, by 6 lbs.

At 15 years, by 8 lbs.

At 20 years, by 23½ lbs.

These statistics are derived from a comparison of the male inmates of the Earlswood, Royal Albert, and Larbert Idiot Asylums with normal children of similar social class. With respect to female idiots, a comparison has not been made, because sufficient data regarding heights and weights of ordinary girls have not been tabulated in this country; but I notice, in the report for 1881 of the South Boston Idiot School, Dr. Tarbell, the superintendent, states that the same kind of disparity exists in the two sexes; and remarks that, as compared with Bowditch's statistics for normal children, idiot children are relatively deficient by an average of 2 inches and 9 lbs. The relative *rate* of growth of the two sexes of idiot children corresponds very nearly to that of the two sexes of normal children, and is subject to the same variations at the

<sup>1</sup> *Manual of Anthropometry*, 1878. Mr. Roberts is now (1883) about to publish supplementary tables of heights and weights of the female population.

age of puberty, which, as a rule, is deferred about two years in the case of idiots. It is to be remarked, however, that some idiotic girls have a tendency to grow excessively fat after puberty; and I have myself assisted at the autopsy of one who, though only 52 inches high, weighed 229 lbs., had a waist-girth of 56 inches, and a layer of fat 4 inches deep over the abdomen!

The popular notion that idiots necessarily have small heads needs mention only to be discredited. Taking the head measurements of 100 normal children (the inmates of an orphan institution) and comparing them with those of 300 of the patients of the Royal Albert Asylum, the difference of the *averages* for similarly aged groups in each institution was but fractional. The general results are given in the following table:—

Circumferential Head Measurements, given in Inches.	Ages. 5 to 10 years.		Ages. 10 to 15 years.		Ages. 15 to 20 years.		Average.	
	M.	F.	M.	F.	M.	F.	M.	F.
<i>Royal Albert Asylum</i> Imbeciles . . . }	20·10	18·83	20·20	20·19	20·83	20·18	20·5	19·9
<i>Orphan Institution</i> Normal Children }	20·89	19·73	20·70	20·60	21·25	21·25	20·87	20·33

Thus the general head circumference at the Royal Albert Asylum averaged 20·5 and 19·9 inches for male and female idiots respectively, as against 20·87 and 20·33 for the male and female orphans of normal intelligence. Of course at each end of the scale, in the case of idiots, striking abnormalities, both as regards size and form, are found, so that (to quote the quaint words of old Fuller in his *Dissertation on Natural Fools*) the “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.”

From the etiological standpoint we may divide all cases of idiocy and imbecility into two primary classes:—(1) the congenital or developmental; (2) the non-congenital, acquired or accidental. The former is doubtless in reality the more numerous class, though if we trust solely to the statements of patients' friends, the reverse would appear to be the case. The natural reluctance of parents to acknowledge congenital defect in their

offspring leads them oft-times to assign merely incidental infantile ailments as the efficient cause of the mental failure; and not unfrequently we are told that the child was all right till it had bronchitis, had met with some slight accident, or had been subjected to that most malignant of operations, vaccination! Even with regard to the undoubtedly potential cause assigned in 28 per cent. of all our cases, viz., infantile convulsions, the inquiry naturally suggests itself how far these convulsions are the original cause, and how far they are simply a concomitant, of the nervous defect which expresses itself in idiocy. I am aware that Dr. Charles West, in his classical treatise on the diseases of children, states his opinion that "instances of really congenital idiocy actually form a minority of the cases of that condition;"<sup>1</sup> and were we to be guided by the parents' statements alone, we should be called on to believe that in the Royal Albert Asylum the non-congenital slightly outnumbered the congenital cases. A more discriminating examination will, however, tend to show that many of the so-called non-congenital cases really belong to the latter class; and this is in accord with the experience of Earlswood, where Dr. Graham (the late medical superintendent) says that 65 per cent. at least out of eight hundred cases studied by him, were congenital. Happily the consideration referred to by Dr. West in connection with his above-quoted opinion, viz., that a "sense of hopelessness attaches to congenital disease,"<sup>1</sup> is not borne out in the experience of most training institutions. In fact, speaking generally, the prognosis is more favourable in congenital than in non-congenital cases.

It may sometimes be of practical moment to the practitioner to distinguish between the two classes of cases. Congenital idiots have often peculiarities of conformation of head or feature which bear the impress of original defect. A shelving forehead, a flattened occiput, a notable disproportion as to size between head and body as in microcephaly, a keel-shaped forehead as in scaphocephaly, marked obliquity of the supra-orbital ridges, absence of the nasal bones, and a lambdoid ( $\Delta$ -shaped) vaulting

<sup>1</sup> West, *Diseases of Insanity, &c.*, (5th edit., p. 275.

of the palate, are some of the cranial peculiarities associated with *congenital* forms of idiocy. We shall see also that osseous irregularities in the form of the hands and feet, fissures and hypertrophy of papillæ of the tongue, and a coarse, sometimes branny, epidermis, are diagnostic marks of one congenital variety. The external ear is often unshapely, planted low down and comparatively far back; the angle of the jaw is more obtuse in congenital idiots than in normal children. The teeth are irregularly developed and ill-arranged. The non-congenital idiot, on the other hand, has not unfrequently a well-proportioned head (if not hydrocephalic), comely features, a skin and tongue void of marked peculiarities, and shapely hands and feet. There is, however, lack of intelligent expression, the eye is vacant or wandering; and in many cases paralysis, contractures, and jactitations, proclaim lesions of the nervous system. Nevertheless, in some cases of non-congenital idiocy the physiognomy is pleasing, and, to the uninitiated, fallacious as regards prognosis. My experience, indeed, leads me generally to concur with the remark of Dr. Langdon Down,<sup>1</sup> "that the prognosis is, contrary to what is so often thought, inversely as the child is comely, fair to look upon, and winsome." Of course, there are cases of *slight* brain injury producing imbecility, the prognosis of which is hopeful; but, speaking broadly, the congenital idiot, whose brain is simply undeveloped, has a better chance of improving under training than the non-congenital, whose idiocy depends upon serious brain lesion. In the latter case the mischief is too often ineffaceable; in the former, processes of growth and development, fostered by favouring influences, may do much to supplement original deficiencies.

Passing now to an examination of the individuals composing these primary classes, we shall be able to mark out several groups, the members of which display physical characteristics in common. The abnormal smallness of head (seen in fully 5 per cent. of the inmates of most idiot asylums) will arrest attention, and these, whom we shall for the most part find free from other bodily deformity, we class as *microcephalic* idiots. At the other

<sup>1</sup> *Obstetrical Transactions*, vol. xxii.

end of the scale we shall notice (in about the same proportion) abnormally large heads, and these we shall find to be the result either of *hydrocephalus* or of *cerebral hypertrophy*. Obviously deformed heads also will be met with, though in comparatively small number; these may be obliquely twisted (*plagiocephalic*), or strikingly asymmetrical, or the forehead may be prolonged forward to a median ridge, suggesting resemblance to the keel of a boat, this type consequently being named *scaphocephalic*. "Sugar-loaf-like" crania (*oxycephalic*) are occasionally seen, perhaps due to compression in birth; and there are besides heads (though few) marked with forceps. Indentations from blows, and other marks of violence, &c., may sometimes be discovered; and cases of idiocy from injury are conveniently classed as *traumatic*. In other cases we shall see strong evidence of scrofula with a scrofulous family history; these I think we may properly class as *scrofulous*. In some (which we may perhaps consider to be nearly related to this class) we shall be struck with a peculiar physiognomy resembling that of the Mongol race, whence this special type of idiocy has been described by certain authors as the *Mongol* or *Kalmuc* type. Then come cases more or less resembling *Cretins*, some being goitrous, others dwarfish with loose skins and fatty tumours rising above the clavicles. In a few cases squareness of forehead, a flattening of bridge of nose, and possibly dilated pupil with strabismus, may excite suspicion, and if on scrutiny of the mouth we find "Hutchinson's teeth," we may be certain that such cases are of *syphilitic* origin.

There remains a large number of cases in which the predominant symptoms are *nervous*. Abnormal nervous excitability, apart from obvious nervous lesion, characterises some, and, though unaccompanied by epilepsy or external paralysis, may so far interfere with the faculty of attention as to give rise to mental imbecility, which may be described as of primarily *neurotic* type. In other cases—and these form a very numerous class—nervous troubles evidence themselves by fits of *eclamptic* or *epileptic* character; and, in a still larger number of cases, various forms of *paralysis*, sometimes associated with spastic



rigidity or spasmodic movements, co-exist with idiocy. In a few cases mental imbecility results from an occlusion of the avenues to the intellect, as in deaf-mutism combined with blindness, and this we may call (with Seguin) *sensorial idiocy*, or (with Ireland) *idiocy by deprivation*. In other cases we shall trace mental deficiency to *fevers* which have left their impress upon the nervous system; and in some there will be evidence of *shock* to the nervous system,—as from fright, or of *mal-nutrition* from the abuse of opiates or alcohol. Finally, we shall see many cases of mixed type resulting from one or more concurrent causes.

Summarising what we have thus cursorily observed, we may group the leading types of idiocy in the following tabular form —

A. *Congenital or Developmental*<sup>1</sup> *Cases.*

Types.	Leading Physical Characters.
1. Microcephalic, . . .	Small heads: forehead and occiput defective.
2. Hydrocephalic, . . .	Large globular heads.
3. Plagiocephalic, . . .	Distorted heads: features in oblique plane.
4. Scaphocephalic, . . .	Long heads: keel-like distortion of forehead.
5. Scrofulous cases, . . .	General and local manifestations of scrofula.
6. Mongol type, . . .	"Mongol" physiognomy: fissured tongue, &c.
7. Cretinoid cases, . . .	Stunted bodies: irregularly expanded heads.
a. Sporadic, . . .	Fatty tumours above clavicles.
b. Endemic, . . .	Enlarged thyroid glands.
8. Syphilitic cases, . . .	Signs of inherited syphilis.
9. Primarily neurotic, . . .	Body well developed: signs of irregular nervous action.
10. Sensorial idiocy, . . .	Two or more senses deficient ( <i>e.g.</i> , sight and hearing).
11. Mixed cases, . . .	Coalescence of two or more types as characterised above.

<sup>1</sup> "Developmental" conveniently includes those cases which though of intra-uterine origin become more pronounced as physical development proceeds.

B. *Non-Congenital, Acquired or Accidental.*

Types.	Leading Physical Characters.
1. Traumatic, . . . .	History or traces of accident.
2. Post-febrile, . . . .	History or traces of febrile attacks in infancy.
3. Hydrocephalic, . . . .	Large globular heads.
4. Hypertrophic, . . . .	Large square-built heads.
5. Eclampsic, . . . .	History or traces of infantile convulsions.
6. Epileptic, . . . .	Presence of epilepsy.
7. Paralytic, . . . .	Presence of paralysis.
8. Idiocy by deprivation,	Loss of two or more senses in infancy, <i>e.g.</i> , sight and hearing.
9. Emotional idiocy, . . . .	No bodily deformity : shrinking, scared expression.
10. Toxic idiocy, . . . .	No bodily deformity : malnutrition.

We shall now briefly examine the salient features of the principal types above named, citing a few examples.

1. *Microcephalic Idiocy*.—Under this designation I shall consider cases where heads are obviously deficient in size as compared with the body, though exceeding somewhat 17 inches in circumference, the limit laid down by some authorities. In this type the forehead rapidly recedes and the occiput is flattened, so that the cranial capacity is small ; but, for the most part, the features are shapely, the eyes large, the nose sometimes aquiline. In some cases the physiognomy has a bird-like aspect (as with the so-called Aztecs, doubtless imbeciles of this type), whilst in others the expression has been compared to that of a beaver or a mouse. A good example of this class is seen in the case of "Freddy," one of the inmates of the Royal Albert Asylum, who is now eighteen years of age, and, though 55 inches high and weighing 6 stones, has a head the greatest circumference of which is but 15 inches. The longitudinal measurement, taken over vertex from nasal notch to occipital tuberosity, is  $7\frac{3}{4}$  inches, calliper measurement  $5\frac{1}{8}$  inches, and the transverse measurement (from tragus to tragus) is  $7\frac{1}{2}$  inches, calliper measurement 4 inches. This lad has been for nearly twelve years under observation, and in this period his stature has increased from

40 to 55 inches, and the circumference of his head from  $14\frac{1}{8}$  to 15 inches. He is not able to speak beyond two or three monosyllabic words, but he understands much that is said to him, and makes himself understood by signs. He is fairly observant, and somewhat combative; but training has effected but little improvement in him except as regards cleanliness of habits. The prognosis is of course unfavourable in extreme cases, but the degree of intelligence to be attained by microcephals varies with their cranial capacity; and I have known patients with heads measuring less than 18 inches taught to read and write a little, and to do a fair amount of useful work. With regard to the morbid anatomy of microcephaly, the characteristic is a brain abnormally small from formative arrest. This was well seen in the case of an idiot girl<sup>1</sup> who died at the age of fifteen, with a head measuring  $16\frac{3}{4}$  inches in circumference ( $10\frac{1}{2}$  inches antero-posteriorly, and 11 inches transversely over vertex), and whose encephalon, weighing  $21\frac{1}{2}$  ounces, was found singularly deficient as regards the occipital and temporo-sphenoidal lobes of the cerebral hemispheres. The cerebellum, which was relatively very large, was left quite uncovered. This girl could converse in short sentences, read a few words, write letters in a copy-book, and do a little domestic work. Two other cases of extreme microcephaly have been examined by myself, the brain in the first case (a boy of ten, with head circumference of  $14\frac{1}{8}$  inches) weighing only  $13\frac{1}{2}$  ounces; and in the second, with a head measurement of  $17\frac{1}{2}$  inches, the brain weighing  $27\frac{1}{2}$  ounces. Some authorities (amongst whom Virchow has been cited, though I believe without complete accuracy) have attributed microcephaly to premature cranial synostosis. I am myself inclined to think that where premature ossification has been observed (and it is by no means invariable), it is more likely to be the consequence than the cause of the imperfect brain development.

2. *Hydrocephalic* cases may or may not be congenital. Meynert says that in the congenital form the lateral ventricles are extended in their long diameter, while acquired hydrocephalus

<sup>1</sup> For full account of case see *Journal of Mental Science*, Oct. 1878.

increases the ventricles in their vertical and cross diameters. So far as the treatment of idiocy is concerned, the diagnosis between the two forms is of no great practical importance, for it is only when the active disease has subsided that training of any kind is applicable. In such cases, however, considerable improvement may be looked for, and in the case of a lad (J. H. S.), whose head measures 23 inches in circumference, seven years' training at the Royal Albert Asylum has left but slight traces of imbecility, and those chiefly of a moral kind. The physical characters of hydrocephalic idiocy will be best considered in contrast with those of other head-enlarging infirmities in connection with the non-congenital kind. I do not remember to have seen an instance of congenital hydrocephalic idiocy in which the use of the forceps has been alleged.

3. *Plagiocephalic* and (4) *Scaphocephalic* cases may be looked upon as curiosities of idiocy. In the former there would seem to be a unilateral synostosis of the frontal and parietal bones with compensatory enlargement of the other side of head, giving rise to a peculiar lop-sided physiognomy, the features appearing to be set in an oblique plane. In one interesting case I had under care, tedious labour (without instrumental assistance) is noted as a possible cause. It may be well, in passing, to note that a certain degree of asymmetry of head and face sometimes results from unilateral suckling, but usually disappears after the child is weaned. In *scaphocephalic* cases (which are rare) the excess of the longitudinal over the transverse cranial measurements is very striking. Scaphocephaly, however, does not seem to be confined to idiots, and it is normally found amongst certain Polynesian races. In some cases examined by Dr. Minchin only one vertical centre of ossification occurred for the two parietal bones.

5. *Scrofulous Cases*.—Under this head it is convenient to consider those cases of idiocy wherein general and local manifestations of scrofula form the predominant characteristics. "Perhaps two-thirds, or even more, of all idiots are of the scrofulous constitution,"<sup>1</sup> but many of these might also be ranged

<sup>1</sup> Ireland, *Idiocy and Imbecility*, p. 24.

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. In these the scrofulous cachexia, which shows itself in glandular affections, skin eruptions, strumous ulcers, and diseases of the joints and bones, may reasonably be held to account for the malnutrition and want of growth of brain, and mental improvement depends of course upon raising the standard of physical health. Under favouring hygienic influences, as in the case of an idiot child removed from some cellar-dwelling in a confined city to enjoy light and air, with judicious nourishment, in a country institution, a considerable degree of health and intelligence is often developed. 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.

It has been suggested (I think with reason) that the remarkable type of idiocy which has been designated (6) *Mongol* or *Kalmuc* is essentially a scrofulous variety. The physical peculiarities of this type, which are so marked as to give its subjects quite a family resemblance, deserve special notice. They are characterised by an obliquity of the eyes and eyebrows, and an outward turning of the zygomatic arches, together with a flat-bridged squat nose, which, with their wiry hair and muddy complexion, give to extreme cases the Mongolian or Kalmuc aspect, from which Dr. Langdon Down and Dr. Arthur Mitchell have designated this class of idiots. A coarse skin and a transversely fissured tongue, with hypertrophied papillæ, a tendency to clubbed fingers and toes, a sluggish circulation and irritable mucous membranes, are almost invariably met with in these cases. Idiots of this type are for the most part very imitative (often excellent mimics); they have a correct ear for tune and time, and an aptitude for drill and dancing. They are educable at school to a fair degree, but their sluggish temperament interferes with their industrial progress. They are very susceptible to cold, and almost invariably (so far as my experience extends) die soon after puberty, if not earlier, of pulmonary phthisis. These cases are certainly of intra-uterine

origin, and many seem to depend upon depressing maternal influences during gestation. In a considerable proportion of the cases which have fallen under my observation (14 out of 30) they have been last-born children, and in more than one-third a phthisical family history has been traced. An obtusely rounded skull, with tendency to parallelism of the frontal and occipital planes, and a simply-convoluted, but not much undersized, brain, characterise this variety.

Two species of (7) *Cretinoid Idiocy*—that described by Hilton Fagge and others under the name of (a) *Sporadic Cretinism* and (b) *Endemic Cretinism*—are met with. The sporadic cretins bear a remarkable physical resemblance to each other. They are dwarfs (one at Earlswood, twenty-two years old, was but 28 inches high); they have an "old-fashioned" aspect, with broad face, pug nose, and pouting lips. The skin is everywhere remarkably loose and "baggy," the belly tumid, and the hands and feet squat. Fatty tumours, rising above the clavicle in the posterior triangle, are almost invariably met with in these cases, and the thyroid gland is for the most part absent. A certain amount of intelligence and some ability to speak usually exists in patients of this type, but they are characterised by an extreme slowness of thought and action, and consequently but little educational progress is to be looked for. The theory that this type may be referred to drunkenness of one or both parents during procreation has been advanced by Dr. Langdon Down, but evidence on such a matter is of course difficult to obtain, and I am not able to confirm that view from information received as to two cases which have come under my notice. One would think that, were the theory true, the type would be more common, and I have seen but two cases during thirteen years in the north of England. In several autopsies of sporadic cretins described by Dr. Fletcher Beach, the inclined plane formed by the basilar process of the occipital with the sphenoid bone was found unusually steep; and the brains, while not very deficient in size or convolutions, were found comparatively destitute of multipolar cells.

Cretinoid idiots, with enlarged thyroid glands, presenting

remarkable resemblances in feature and bodily conformation to the wretched beings met with in the valleys of Savoy, are occasionally seen in English idiot asylums. This type, which must be distinguished from that of the so-called *sporadic* cretinism just described, is not, however, common in this country, and I have myself seen but one well-marked example,—a lad born in Northamptonshire, who died in the Royal Albert Asylum at twenty years of age. He was short and squat (only 4 feet 7½ inches in height), his eyes were widely separated, the nose contracted at its root with expanded alæ, the lips thick, and the complexion muddy. He could speak slowly, and had learned to read and write a little at school; his gait was shuffling and unsteady. In this case the cranial sutures were all closed, and no diminution of the occipito-basilar angle (such as has been described as characteristic of endemic cretinism) was observed. Considerable improvement has been recorded to have taken place in the physical and mental symptoms of cretins, in consequence of an improvement of their hygienic surroundings, as notably exemplified in Dr. Guggenbühl's establishment on the Abendberg.

8. *Syphilitic* idiocy is not so commonly met with in idiot asylums as would be anticipated. The principal reason for this is probably that inherited syphilis is more likely to produce juvenile dementia (*i.e.*, intellectual breakdown after the evolution of the mental faculties) rather than amentia (*i.e.*, congenital idiocy). I have seen three well-marked cases of syphilitic dementia occurring in young people approaching puberty; but it is somewhat remarkable that amongst my 800 cases one only is recorded as congenital idiocy of syphilitic origin, and in not one patient are characteristic "Hutchinson's teeth" to be found.

9. *Neurotic idiocy* is primarily dependent upon inherited instability of the nervous system. Heredity, as shown in mental defect or derangement of near blood relations, is admitted in 20 per cent. of all our cases, and probably exists in a much larger number. It seems to be the *only* efficient cause in about 5 per cent. Such cases are usually marked by abnormal nervous excitability; the senses and perceptions are sharp enough, but there is an incapacity for mental application; not

there are sometimes strange propensities for mischief, and a perverseness which seems to take pleasure in the annoyance of others. The designation of moral imbecility may properly be applied to many members of this class, and, as puberty approaches, insanity of unmistakable character often supervenes.

10. Cases of *congenital sensorial* idiocy (where there is original defect of the external senses) are but rarely met with; but deprivation of sight and hearing in early infancy, as in the cases of Laura Bridgman, Meystre, and others, produce mental occlusion practically equivalent to idiocy, until patient training of the tactile sensations opens up an avenue to the central intelligence.

11. *Mixed Cases*.—It will, of course, be understood that while for descriptive purposes a division into types is necessary, the majority of cases of idiocy present mixed characters; and, if sufficient information be obtainable, the existence of several concurrent causes may be ascertained. Well-defined typical cases are, however, now and then met with, especially in the "Mongol" and "Sporadic Cretin" varieties.

It now remains for us briefly to consider the several forms of non-congenital idiocy.

(1) *Traumatic* cases vary much in gravity with the severity of the original injury. Falls on the head in birth, and injuries by forceps, are amongst the earliest assigned causes of traumatic idiocy. Two cases are attributed to the child being shot out on to the floor in parturition; and forceps delivery is recorded in 2.6 per cent. of our cases. In less than one-fourth of the latter, however, is there mention of any marks of the instrument. In every case indeed where the forceps was used, instrumental delivery was called for by prolonged labour, and prolonged labour alone, without instrumental interference, is debited with 2.9 per cent. of our cases. It seems probable that the timely and skilful use of the forceps, so far from producing idiocy, often prevents that condition, by obviating the occurrence of congestion from protracted cranial pressure, which eventuates in *asphyxia neo-natorum*. There is little doubt that this condition is most perilous to the integrity of the nervous system,



giving rise to spastic rigidity, paralysis, and choreiform symptoms, even if it do not destroy the intelligence. Dr. Langdon Down states, that of 2000 cases of idiocy examined by him no less than 20 per cent. were born with well-marked symptoms of suspended animation. Falls on the head from the arms of a careless nurse, falls down stairs, kicks from horses, &c., are amongst the most common assigned causes of traumatic idiocy. Profound and hopeless idiocy sometimes results from severe falls, but I have known great improvement take place in the slighter cases of injury.

(2) By *post-febrile* idiocy is meant that variety which results from cerebral inflammation occurring in the course of acute febrile diseases, such as the exanthemata and whooping-cough. In these cases there is often room for doubt whether the idiocy is not owing as much to original instability of the nervous system as to the febrile attack; some 6 per cent. of our cases are, however, alleged to be thus caused. Speaking generally, I may say that the prognosis of such cases is unfavourable, though, of course, the degree of improvement to be expected varies inversely with the intensity of the original morbid process.

(3) *Hydrocephalic* and (4) *Hypertrophic* cases are taken together in order to describe their points of contrast. In the first place, the globular head of chronic hydrocephalus is in contrast with the squarely built head, with piled-up forehead, of hypertrophy. The distance between the eyes is less in hypertrophy than in hydrocephalus. Hypertrophy is often associated with rickets; hydrocephalus with scrofula, sometimes syphilis. The prognosis of hydrocephalic idiocy, when all acute symptoms of hydrocephalus have subsided, is favourable; that of hypertrophy is unfavourable, from its tendency to pass into an inflammatory form. Headache is common in hypertrophic cases, and mania sometimes supervenes.

(5) *Eclamptic*, (6) *Epileptic*, and (7) *Paralytic* cases form a large proportion of the class of acquired idiocy. In 28 per cent. of our 800 cases there is a history of infantile convulsions (eclampsia), and in at least 20 per cent. these convulsions are assigned as the cause of the idiocy.

*Epilepsy*, subsequent to dentition, is set down as accounting for only 3 per cent. of our cases, but it must be borne in mind that at the Royal Albert Asylum confirmed epilepsy is a disqualification for admission, and it is doubtless a very frequent concomitant, if not cause, of idiocy. Even with this rule of exclusion 10 per cent. of the patients of the asylum suffer more or less from epilepsy. In some cases the persevering administration of bromides for lengthened periods has cured the fits, and rendered the patients capable of benefit by training; but, speaking generally, epileptic idiots are disappointing subjects for tuition. They make a fair amount of progress for a time, but if they have a severe recurrence of epilepsy lose what knowledge they have acquired. They are often very excitable just before the actual occurrence of fits, and on this account are not suitable associates for ordinary quiet imbeciles. Dr. Alexander of Liverpool has recently practised, with a fair proportion of success, the deligation of the vertebral arteries as a remedy for epilepsy, and I have at present under care, at the Royal Albert Asylum, one of his cases, in which entire cessation of fits (formerly numerous) and considerable mental improvement have resulted. The prognosis of *eclamptic* idiocy is not very favourable, as a brain damaged by infantile convulsions often indicates inherited nervous instability; but I have seen instances of very satisfactory development of mental power in cases of this type.

*Paralytic* idiocy may be of congenital origin, and is not unfrequently associated with cerebral extravasations caused by pressure in parturition, imperfect power and choreiform movements of the limbs being produced. It may also result from infantile convulsions or paralysis, from traumatic causes, and from apoplexy.

The prognosis in these cases is necessarily dependent upon the original cause, and the cessation of acute symptoms; speaking generally, mental rather than physical improvement is to be expected from training. There are indeed many cases in which the mental faculties are to a considerable extent obscured by physical incapacities, especially when aphasia exists; and in such a fair amount of education is possible by appropriate methods. Those

affected by choreiform and athetotic movements may be much benefited by drill, and by exercises calculated to give precision to the movements of the fingers, *e.g.*, bead-threading, or perforating picture cards, such as those used in the Kindergarten system.

It will not be necessary further to allude to cases of (8) *Idiocy by deprivation*, but a passing reference must be made to (9) *Idiocy produced by emotional causes*, chiefly fright. No less than 12 cases out of our 800 (1·5 per cent.) are attributed with some show of reason to this cause. In seven of these one or more fits followed the fright; in the remainder, shock to the nervous system alone is said to have produced idiocy. A shrinking, scared expression characterises some of these cases; the prognosis is as a rule unfavourable.

(10.) *Toxic idiocy* is in this country chiefly associated with the administration to infants of opiates, which, under the name of soothing syrups and other specious titles, are, it is feared, in much request amongst the poorer classes. In Sweden, according to Dahl, alcohol is largely used to quiet young children, with a similar effect of producing atrophy of the nerve centres, and of dwarfing the physical development.

In conclusion, we can but briefly glance at the bodily defects and ailments commonly met with in the classes of idiots. Examples of arrested development, and of degenerations in imperfectly-formed structures, are not infrequent. Coloboma iridis, conical cornea and congenital cataract, atrophy of the disc, and optic neuritis are amongst the ophthalmic abnormalities met with. Nystagmus also is frequently seen. Hare-lip, cleft-palate, and split uvula are not very uncommon. The dentition is usually irregular, the milk teeth in some cases not being shed at the time of eruption of the permanent teeth; and the teeth are prone to decay. The tongue is in many cases disproportionately large; its surface may be of peculiar character as before described; it is sometimes clubbed at the tip, and its mobility seems impaired. The external ear is often misshapen, and without the pendulous portion of lobe. Hæmatoma auris, so frequently seen in lunatic asylums as to have gained the name of "the insane ear," is, in my experience, infrequent amongst idiots;

indeed, I have only seen two examples of it. Contracted and misshapen chests are common; patulous foramen ovale has been frequently observed. Traces of the umbilical vein and ductus venosus are sometimes abnormally persistent. Herniæ are common; imperfections of the genital organs are occasionally met with, and in a *post-mortem* examination of a lad of eighteen the testicles were found undescended in the iliac fossæ. Spastic contractures of the limbs, club-foot, and paralysis attended with local atrophy, are seen in varied forms. Skin diseases of peculiar character sometimes present themselves; a mottled red appearance of the cheeks (as of numerous aggregated nævi) undescribed by dermatologists, has been noticed in some half dozen cases of idiocy. Parasitic diseases (as ringworm) find a congenial soil on the ill-nourished integuments of idiots; and they seem peculiarly liable to zymotic contagion. Scrofulous bone affections, as exemplified in the long bones, the sternum, and ribs, and even in the skull itself, are frequently met with, and I have had under care one remarkable instance of cranial caries with hernia cerebri. A tendency to osseous hypertrophy is occasionally seen, and an imbecile boy, at present in the Royal Albert Asylum, has exostosis on almost every bone of his body.

With regard to the mortality of idiots, the rate is much in excess of that of normal persons. Between the ages of five and twenty, it is said to be from six to eight times that of the ordinary population. The causes of death reflect the constitutional character of the class, and about two-thirds of the deaths in idiot asylums are attributed to scrofulous or tubercular disease. The annual death-rate from all causes at the Royal Albert Asylum has averaged 3·6 per cent. during the twelve years of its operations. The period of puberty seems specially perilous to idiots, but, if this be survived, a premature senility may in many instances be looked for. Quite recently I had to certify *senile decay* as the cause of death of a patient aged only thirty-five, the autopsy showing no more definite lesion than worn-out mucous tissues and digestive organs.

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