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Publication/Creation

c. 1905

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On Mental Deficiency in Children

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In the present article we propose to set forth some of the leading characteristics of typical groups of mentally defective children, & to show their relations to diagnosis and prognosis, with remarks upon their etiology and pathology. In Conclusion we will be submitted some Suggestions as to treatment and training.

The term Mental deficiency is intended to include the several degrees of departure from the normal mental development of the child.

Which are included in the terms idiocy, imbecility and feeble-minded-ness. The connotation of these terms respectively varies somewhat in the writings of different recognised authorities on the subject; and of late years there has been a benevolent but somewhat confusing tendency in this country — as previously in America — to use the word "feeble-minded" in a sense inclusive of the lower grades of mental defect. While it must be admitted that feeble-mindedness, imbecility and idiocy are but gradations in the severity of mental deficiency, and respectively denote not a difference not of kind but only of degree, it is certainly convenient to retain distinct terms to mark the gradations, both for scientific and sociological reasons. Amentia is indeed the inclusive scientific term, indicating a generic difference between minus conditions of mentality dating from birth or from

so early an age as to preclude any previous definite manifestations of mental development, and the degenerative processes of dementia in later life; while insanity, which causes a perversion of developed mental faculties, though it may occur in childhood, stands in an entirely different category.

By far the larger number of cases of dementia Essentially date from a period anterior to birth. This statement is of course at variance with what most parents are willing to admit, for they are naturally reluctant to recognize any tendency in themselves to the production of defective offspring. From certain statistics given in institution reports it would seem that the non-congenital outnumber the congenital cases; but a closer scrutiny of the statements made by parents, & subsequent acquaintance with the relatives, would demonstrate that many cases reported as acquired are in their essence congenital

To take one instance, Eclampsia (infantile convulsions) is stated to have occurred in 32.58 per cent of 1200 cases examined at one large Institution, but it is very obvious that fits are readily assigned by parents as the cause of mental impairment when in truth they are but one of the evidences of innate ~~mental~~ of the whole nervous system. instability. Feeble-mindedness is frequently attributed to falls, though the true etiology will point to an antecedent condition of abnormal nervous impressionability, which is the more important factor. Not a few children suffer from infantile convulsions with no resulting mental enfeblement, & probably the majority have falls even on their heads which, with a previously sound brain, do not produce traumatic imbecility. The primary division of cases of mental defect in children into

(1) the Congenital or primary
(2) the non Congenital, ~~or acquired~~ or secondary } class

requires therefore to be made with much discrimination and caution.

From the pathological standpoint conditions of imperfect or irregular cerebral development must be carefully distinguished from those of premature degeneration. The latter, occurring early in life, (as e.g. in some cases of infantile paralysis) produce mental enfeblement interfering with capacity for Education, which for practical purposes may be classed with dementia; though similar degenerative changes at a later period would tend to dementia.

Looking more closely at the so called Congenital class of cases, we shall find that it really consists of two groups, viz. (a) those due to causes acting prior to birth; (b) those due to causes acting at birth. With regard to the first group we must necessarily consider the important subject of heredity; and in the most recent investigations - those

of Dr A. F. Tredgold[x], who had the opportunity of scrutinising by personal inquiry the family history of 150 defective children in the Asylum Asylums of the County of London, it was found that in as many as 90 per cent some adverse hereditary influence could be traced. So limited a number of cases affords however a slender basis for generalisation; and an examination of Case books, carefully compiled & recorded in the light of experience, with regard to [†] 2380 children under the care of Dr Fletcher Beach & the present writer at Darenth & the Royal Albert Asylum respectively, gave the following factors (in many cases concurrent) as present in the family histories: viz:-

Phthisical Family History 28.31 p.c.
Hereditary Mental Weakness 21.38 p.c.
(Insanity & Imbecility)
~~Intemperance of parents~~
Epilepsy, or other marked Neurosis 20.0 p.c.
Intemperance in parents 16.38 -
Consanguinity in parents or
Grandparents 20.0 - -

[x] Mott's Archives of Neurology Vol. I. p. 328 seq -

[†] Hack Tuke's Dict. Psych. Med. Vol II p. 664.

Jordan

Syphilis, commonly suspected to be a frequent cause of degeneracy in offspring, figured but insignificantly in these statistics, only to the Extent of 1.17 per cent of cases in which there were stigmata of inherited syphilis, or parental syphilis had been ascertained; but parents do not readily admit such a cause, & many syphilitic children die before attaining the age for Institution treatment.

Passing to the second group, those due to causes acting at birth, we find in the statistics above referred to the following figures: —

Premature birth 3.52 p.c.

Difficult birth 17.55 p.c.

Instrumental delivery is recorded in 3.31 p.c. of the cases, & asphyxia neonatorum was noted (by Dr Beach) in 12.96 per cent. In 1.51 p.c. some accident to the child occurred, due probably to precipitate labour, & in .96 p.c. the imbecile was one of twins. In 20.67 p.c. the imbecile was the first born of a family.

Did space permit, it would be easy to show that the conditions of the mother leading to premature, difficult or precipitate parturition, were really the original cause of the trouble; and, in passing, one may just note that our statistics show that judicious forceps delivery is less harmful as regards mental impairment in the child than is unassisted but prolonged labour. Primogeniture, which was noted in but little more than one fifth of the cases, cannot be regarded as a serious factor, for the average size of the families investigated was more than five -

It has already been stated that the non-congenital (or acquired) class of cases is much smaller than parents would have us to believe - The more conversant one becomes with the histories of patients & their families the stronger one's conviction grows becomes that the accident, the illness or the shock to which the mental defect is attributed, is but an incident

in most cases & not the original cause of the mental defect. The late Dr. Langdon Down recognised this view and suggested the term developmental to cover cases reputed to date from some crisis of development, e.g. the first or second dentition, puberscence &c.
Following the statistics already quoted we may give, subject to the above considerations, the following per-centages:—

Eclampsia (infantile convulsions)	27.39 p.c
Epilepsy (Darenth statistics)	11.52 "
Infantile &c Paralyses.	0.92 "
Traumatism (injury to head)	6.17 "
Fright or Shock (mental)	3.06 "
Sunstroke.	0.54 "
Febrile diseases with brain complicn. (Meningitis, atrophy &c)	5.96

We have already remarked on the significance of infantile convulsions; and similar criticisms wd be appropriate with regard to many of the causes scheduled above. Overpressure at school was an assigned cause in only 0.16 of the 2380 cases.

We must now cursorily glance at the typical groups into which mentally defective children may be divided. Some of these have definite physical characteristics, a knowledge of which is very helpful in diagnosis & prognosis, but it is not pretended that these are present in all defective children. Speaking generally there is a lack of normal physical development, as of mental, in this class; and functional as well as organic, defects characterize their nervous system. Broadly looking at mental characters we may divide all mentally defectives into two large classes: (1) those with under-acting nervous systems, (2) those with over-acting nervous systems; in other words (1) the dull & apathetic, & (2) the nervous & excitable. In the former class (e.g. in the cretin) nerve-centre reaction time is slow: in the latter, nerve is unduly irritable, tending to explosiveness, and ill-controlled. Highly neurotic & Epileptic cases are instances

Want of power of sustaining attention
is the common psychical characteristic of both
classes: in the first, it depends
upon defect of energy, in the second,
upon defect of inhibitory power.

Normal

Perhaps the largest number of
cases of mental deficiency are not
so much characterised by typical
physical abnormalities as by a
departure in some way or other
from the standard of development
of normal children of similar
age. In many may be discovered
the so-called stigmata of degener-
ation, such as puny growth, ill-proportioned
features, overstanding frontal
ears, deformed palate, hare-lip,
and traces of persistent foetal
structures such as Epicanthic folds.
Congenital heart disease, with
patulous foramen ovale, is not
uncommon. Then there are faults
in form & finish of the skull, & sometimes
in addition, of the integumentary structures.
Associated are defects of mental

action – e.g lack of "taking notice" in early infancy, & of speaking at the usual age – which gradually arouse curiosity; and in neurotic cases there is much irregular or ill-regulated muscular movement. Such are the general features of the large group of primary mentally-defectives called by Ireland "Cretons"; but perhaps preferably designated (as suggested by Tredgold) Cases of "Simple primary Amentia"

There are, however, certain types which separate themselves from the general mass of Congenital cases by distinctive physical features. The first to be mentioned, as in this is the diminutive and imperfectly shaped head termed, in the Greek, Microcephalic. No arbitrary standard of measurement (e.g. less than 17 inches as has been proposed) is applicable to these cases, for peculiarity of form, such as is seen in the illustrations, e.g a lopsidedly

? Clarendon type

receding, laterally defective forehead, a somewhat pointed vertex & flattened occiput, is constantly associated in this variety with relatively reduced cranial dimensions (see Plates 1 & 2)

(Plate 1 ~~&~~ 2 reprints on sheet Trans. R Dub. S. NS Vol V) Contrasting with this we have the distended Skull of the hydro-cephalic type, some cases of which are of intra-uterine origin (Plate 3). (Plate 3 on Carte de Visite) [circled: print]

But perhaps the most remarkable as it is the most uniform, of all the types of primary amentia is that designated Mongolian (Plate 4). (Plate 4 Carte de Visite) Without concerning ourselves with the theory of ethnic degeneration, which induced the late Dr Langdon-Down thus to designate this variety, we cannot fail to observe in English born cases of this type some physiognomi-cal resemblances to the denizens of the Far East. The skull is a short oval flattened posteriorly. The palpebral fissures are often obliquely set & of almond shape; the nose is squat, usually ~~often~~ flat at the bridge with distended cartilages. ~~& Their hair, usually dark, is wiry.~~ (Plate 5 3 boys) The hands are often as broad as long.

the fingers being stumpy, & the little finger sometimes incurved towards the ring finger (see Plate 5) There are also tegumentary defects: the skin is coarse, even furfuraceous, the hair, of dark-ish tint, "wiry" in appearance. The mucous membrane of the lips is often cracked, & the tongue, which is large, marked with transverse fissures & protruding hypertrophied papillae. Adenoids are frequent. Children of this type seem to be more liable than others to Cardiac imperfections: in fact the whole bodily structure points to a lack of finish.

Another type of mental defect with very definite characteristics is that of Sporadic Cretinism, or as Bourneville designates it, "myxoedematous idiocy". If not absolutely of primary origin its symptoms do not develope so early in life that it may be classed as Congenital especially as it depends upon formative

Plate 6?

defect of the thyroid gland - The characteristics of this type are slow reaction & response, with dwarfed body, baggy skin, tunnel abdomen (with frequent umbilical hernia), bowed legs, broad squat hands & feet. The dolichocephalic skull expanded laterally & often reveals a depression over site of ant. fontanelle. The nose is short: often retroussé: the lips lax & the tongue, enlarged with thickened tip, all to project beyond the teeth. There is a malar blush in most cases. Growth is slow, & all the bodily & mental functions are notably retarded

Vickers

A passing reference may here be made to the class of Achondroplasiacs mistaken sometimes for Cretins but not necessarily mentally deficient. Symington & A Thomson define Achondroplasia as "an absence, arrest or perversion of the normal process of Endochondral ossification of the most definite & universal character in every element of the skeleton

Symington & Johnson. Lect. Rep. R.C.P. Ed., 1892 Vol iv p. 238

in which the normal process usually takes place during intra-uterine life". There are usually intelligent but short-limbed dwarfs.

Before proceeding to cases of post-natal origin we must look at the group which we may conveniently include under the name of Cerebral Infantile Paralysis – In these cases the degree of mental impairment varies considerably, varying probably with the degree extent of meningeal hæmorrhage at the time of birth. "Birth-palsies" have indeed been attributed by Gowers, Ingram & others simply to pressure & hæmorrhages at the time of birth; but † Collier shows that in many cases of diplegia congenital predisposition as well as morbid maternal states play an important rôle. Cases of infantile cerebral palsy naturally fall into the three varieties of hemiplegics, paraplegics, & diplegics & monoplegics & spastic conditions of limbs being found in

† "Brain". Vol XXII Jan 3. p. 373.

each, with degrees of mental impair-
-ment by no means proportional to the
physical defect.

Eclamptic cases occupy, for the
reasons above-stated, a borderland
position between the congenital &
non-congenital class. It is not always
easy to say whether they are the result
or the cause of a damaged brain, but
anyhow we may regard them as Elements
in a vicious circle. Epileptic cases,
fall very much under the same cate-
-gory, though the fits may not appear
till a developmental crisis, E.g Second
dentition or puberty.

Traumatic cases again for the
most part to pre-disposition — The
mental impairment varies very much
in different cases, & in some may be
very mild indeed, amounting perhaps
simply to backwardness or Eccentricity.

& similar considerations apply to
cases attributed to fright or shock;
& to Sunstroke —

Meningeal & Encephalic inflam-

- matters of toxic origin, occurring sometimes in the course of acute febrile attacks, sometimes independently, are doubtless responsible for many cases of impaired brain action; whilst others are classed by Bourneville as due to (1) parenchymatous encephalitis & to (2) atrophic sclerosis.

Mention must be made of the curious hypertrophic variety of idiocy - to be carefully distinguished from hydro-cephalus - described by Bourneville as Sclérose tubéreuse - Limits of space will only permit a passing reference to the familial type of infantile cerebral degeneration designated Amaurotic Idiocy* - Various cerebral malformations and deficiences - pathological as well as formative — e.g. porencephalus - can be referred to only as occurring in a certain number of cases of mental defect.

One typical class of cases occurring in childhood & youth - though comparatively rare, are of great pathological

* See Journal Chir: Paris. Vol LXXX p. 87.

interest, viz- those of recent years included under the title of Juvenile General paralysis though described as long ago as 1883 by Dr Jullson Bury under the more exact name of hereditary syphilitic dementia - In these cases endoarteritis seems to lead to cortical sclerosis & atrophy of brain cells Though the typical stigmata of inherited Syphilis are not always to be found their family history will generally show the probable existence of such taint.

In referring to the types we have said but little of the mental symptoms because it will save space to consider them in relation to diagnosis & prognosis

First we may remark in a general way that Congenital cases are more likely to present stigmata of degeneration than those truly accidental, though the absence of such stigmata is by no means conclusive of the case being non-congenital As regards prognosis Dr Langdon-Downs words may be quoted that this, contrary to what is so often thought, sincerely as the child is comely, fair to look upon &

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winsome." As a rule there is more prospect of improvement in a case of simple arrested development than in one of structural brain lesion.

Yours

With regard to what appears to be a simple case of primary amentia - i.e one not presenting any typical physical peculiarity - we shall be wise to note the points of difference both in physical & mental development between the patient & a normal child of similar age; as our diagnosis will have to rest upon the comparative retardation of the mental & bodily faculties. A baby who does not take notice at the usual time & seems to have no desire to hold up its head or to use its hands or feet, is, if not incapable on account of physical debility defect, usually mentally defective. As the time for walking & talking goes by without any effort on to use its limbs & speak the nature of the case becomes more obvious; & the prognosis will depend upon the degree & depth of incapacity.

Family history - e.g tuberculosis - will also help us. If however the size of head be notably small — say at 6 months 15 inches instead of 17 — & the form characteristic we diagnose microcephaly, and in this case we may prognose fair development of the sensorial & muscular powers, but little concentration of thought & a mental capacity limited by the defective development of brain. In hydrocephalic cases, if active mischief have subsided, though the child is backward in walking & talking, & may be subject to fits, the degree of mental impairment may not be very marked, & considerable improvement may result under suitable training. Mongolian imbeciles are not infrequently confounded with Cretins, but they are more vivacious than the latter, their skin is not a loose investment as in cretinism, and they have more or less obliquely placed palpebral fissures which Cretins have not, and Mongols have frequently a well marked Epicanthic fold. Cretins have no thyroid

Gland but sometimes fatty tumours in the posterior triangles of neck. Both have large tongues, often protruding, but typical Mongolian tongues are transversely fissured while the Cretin tongue is simply coarse. The Cretin head is larger than the Mongolian, flattened often over the post. of the ant. fontanelle. Mentally the "Mongol" is fairly responsive, at any rate expressing himself in a few words in a gruff voice: he is fond of music & will beat time, & is motorially imitative. The Cretin (untreated) has been well compared to a "toad-like caricature of humanity," responding very slowly, if at all, & functionally inactive. As regards prognosis the Mongol will be capable of some amount of instruction by imitation: the Cretin of none until subjected to thyroid treatment, when he will progress more rapidly than the other. But the range of improvt. is probably limited in both, & the simply convoluted brain of the Mongol corresponds with a simple intelligence characterised by constitutional lack of initiative

With regard to the class of Cerebral Infantile Paralysis the diagnosis is fairly clear, & the mental prognosis, varying with the severity of the physical symptoms, is in many cases much more favourable than their disabilities wd seem to indicate - Indeed hemiplegics not unfrequently learn to read, write, & calculate, & what is more surprising to handle tools with considerable skill.

Eclamptic & Epileptic cases are readily diagnosed: the degree of mental impairment varies considerably in individual cases; and improvement depends very much upon the cessation of the fits. Persistent "petit mal" is even more prejudicial than occasional severe fits.

As a rule the mental deficiency which results from the various forms of meningeal & encephalic inflammation is unfavourable as regards prognosis. Juvenile general paralysis is progressive and usually terminates fatally in the course of four or five years from its onset.

A very cursory glance at the principles of treatment and training must conclude this paper. First improve by all known methods the physical conditions of the patient, removing as far as practicable all obstacles to brain activity that are removeable - Errors of refraction, of audition must be remedied if possible: adenoids, present in so many cases (& especially in those of Mongol type) must be extirpated - The muscular system must be exercised and disciplined in view of known incapacities, the senses methodically cultivated, the personal habits regulated, and continuity of attention encouraged by attractive occupations such as those of the Kindergarten - Physical and manual training are for this class the keys of the intelligence: for the less defective a modicum of ~~ordinary~~ adapted school work - such as may be seen in "Special Schools" will be appropriate if due regard be paid to the avoidance of fatigue - The lessons

should however be mainly objective, and mere exercise of memory without understanding are worse than useless. Though teaching of mentally deficient children must be largely individual, it should not be solitary; and social good qualities are best promoted by instruction with other similar children. In the case of a mentally deficient child, of whatever grade, is usually more easily & judiciously dealt with by teachers outside his own home, where there is often unconsciously a prejudicial reaction on the part of the parents, however well intentioned - Of course all engaged in the training of such a child, whether nurse, teacher or doctor, must know how to obtain the confidence of the little patient, & to be successful such work must be a labour of love.

The Berry H