On the Physical Relations of Idiocy and Imbecility.

by

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Introductory

The writer has been led to submit a thesis treating on the physical condition and other medical aspects of idiotic and imbecile children from the following considerations.

He has been for a period of nearly ten years a medical officer to the Harbent Institution for the Education of Imbecile Children, and as that establishment is much the largest of its kind in Scotland he has had exceptional opportunity for the study of the Classes. Further the importance of such study has been often impressed on him by observing the intense anxiety with which parents seek all possible information as to the vital and mental prognosis of those of their children who may be mentally deficient.

It will afford some idea of the
degree of mental incapacity exhibited by the children who are now to be studied. If an account is given of the conditions under which they are received into the Darlaston Institution in this respect they are divisable into three groups:

1st. Electors.
2nd. Private.
3rd. Paupers.

For the first elected class, which at present constitutes 43% of our population, a list is annually prepared, and from this a number of children are elected, 1st by votes of subscribers, 2nd by nomination of directors. Children who are considered to be totally ineducable or who suffer from epilepsy are not eligible for the election roll. The elected group should then for and receive assistance of imbeciles of the higher grades. Little confidence can however be often placed on the opinion of statement of friends and to we sometimes find individuals of the elected class, who are very slightly educable, or who may even
be profoundly epileptic, but those are the exceptions. Socially the children usually belong to the better sort of the working classes, who parents can neither obtain nor desire to claim relief from the rates, but who are unable to furnish a sufficient sum for their maintenance.

Children of the 2nd. Private Class are those who are supported by their parents or guardians. They generally belong to the middle or upper classes of society. Mentally they range from idiocy to any degree of imbecility. At present they constitute 14% of our charges.

The 3rd. bastard class are sent by the Parochial boards of the parishes to which its members are chargeable. All the members of this group belong to the indigent classes. They may be of any degree of mental incapacity, and may be the subjects of epilepsy or of the disease. 43% of our subjects belong to this group.
As regards age, it is a general rule that children received into the Laubert Institution should be from 9 to 14 years of age. This rule is, however, not very strictly adhered to. When our inmates attain puberty we usually find that little further benefit can be derived from our treatment, and then their guardians become responsible for their care.

At the present date, March 1892, 136 male and 46 female children are being treated in the Laubert Institution.

The foregoing details have only been given in order to demonstrate that in our Institution children of all degrees of mental incapacity and of very various social condition may be studied.
The Classification of Idiotic and Imbecile Children.

The title of this chapter might better be "Classification as applied to Idiotic and Imbecile Children," as the writer after much consideration of the classifications adopted by accepted authorities on the subject and after careful study of the large number of cases which have been under the personal charge has felt to be unable to accept any classification based on single factors which is, in his opinion, of scientific value.

It is doubted the case that many children who are subnormal as regards intellect in response to educative influences, are liable to suffer from various diseases, such as Phthisis, Adenitis, Inflammation of Various Organs, or New effects of Disease, such as Paralysis, but when we consider that children mentally normal have suffered from the same diseases, the
use of such factors as bases for useful a scientific classification of imbecile children may fairly be questioned or even denied.

Notwithstanding this opinion which has been the outcome of prolonged study and of frequent attempts to found a natural classification it will be useful to give a resume of the classification formulated by writers of the most important works bearing on the subjects of idiocy and imbecility which have appeared in our country.

Martin's Drinnan and Hillard in their "Manual for the Classification, Naming and Education of the Feeble-minded, Imbecile and Idiotic" published in 1866 divide those sub-normal in intelligence into 8 groups, viz.

Class 1. Intellectually and Profoundly Idiotic.

2. Having a slight amount of intelligence able to stand and walk a little, often capable of slight instruction.

3. Able to walk, run, and talk.
singers to be made to attend slightly to do easy mechanical work, and to feed themselves, memory and perception very weak and variable in power.

Class 4: Feeble-minded children and adolescents.

5. Born with normal gifts of children but mental development impaired by disease of the brain, by epilepsy, by cerebral injury, or by hydrocephalus.

6. Resembling Class 5 but evidence of permanent disease of the brain exists in the form of epileptic seizures and paralysis.

7. Cases born with hydrocephalus.

8. Perfect individuals who had been educated and who have become debased in mind and body during early youth from vice.

"Dr. T. Ireland, my distinguished predecessor in the Medical Charge of the Leprotic Institution, gives in his Roy..."
valuable treatise entitled "On Idiocy and Imbecility" published in 1877. The following classification of children subnormal as regards mental potentiality.

Class 1. Generous Idiocy

2. Hydrocephalic Idiocy

3. Idiocy due to Congenital Disease

4. Idiocy due to Habitual Disease

5. Hydrocephalic Idiocy

6. Analytic Idiocy

7. Cretins

8. Traumatic Idiocy

9. Inflammatory Idiocy

10. Idiocy by Deprivation

Dr. Langdon Down, physician to the Normal Asylum for Imbeciles issued in 1887 a work entitled "Mental Affections of Childhood and Youth Being the Lettesonian Lecture Delivered before the Medical Society of London in 1887, together with Other Papers." In this volume he repeats his Ethnologic Classification which he had previously published in the London Hospital Reports" as far back as 1866. He states
that he has found that a considerable proportion of idiots and imbeciles can be fairly referred to one of the Great Divisions of the Human family other than the Class from which they have sprung. He naturally finds that in a Group, all Caucasians in race, there are very numerous representatives of the Caucasian type, but states that many approach in physical features other races and accordingly has an

2. Ethiopian
3. Malag
4. South American Indian
5. Mongolian

In the same work, K. Langdon Down gives an etiological classification of the same groups, according to the Defect its Congenital, accidental or developmental in origin.

Before criticizing those the most recent and most generally accepted classifications, it will
be necessary although at first sight the subject may seem but if place the give some exact definition of the terms idiot and imbecile. The definitions which I have been somewhat vague which stress has been put on the indignity inflicted or by the being termed an idiot.

Dr. Ireland (op. cit. p. 1) says "St. Oliver's mental deficiency is extreme stupidity, depending upon mental nutrition or disease of the nervous system, occurring either before, during, or after the addition of the several faculties in childhood."
The word imbecility is generally used to denote a less decided degree of mental incapacity. Thus, when a great distinction between an idiot and an imbecile he means that the mental capacity of the former is inferior to that of the latter.

Mr. Kewenow Down (op. cit. p. 4) thus treats of the definition of the terms idiot and imbecile "It is not uncommon to class all cases of mental lesion occurring in
the young under the category of idiocy, or to speak of those afflicted with the milder forms of the malady as idiots, while the subjects of the milder and less grave manifestations are called imbeciles. This terminology is open to grave objection. The term imbecile is very often applied to that class of mental infirmity which is the outcome of debilitating organic changes of senile, mean or women who may have been in their time capable citizens, become the subject of senile changes of nutrition and lapse into a condition of childishness. This people of this class who are rightly termed imbeciles and to whom in my opinion the designation should be thoroughly prohibited. I know of no defining line of demarcation between so-called idiocy and so-called imbecility. The gradations of mental incapacity are as numerous and delicate as those of mental capacity among those who are doing the world's work. The division, therefore, into imbeciles and idiots is thoroughly wrong and misleading. I have no great liking for the term idiot. It is to frequently a name of reproach. Moreover in most cases it does not fairly represent the conditions which exist. The word idiot means "idiotic", and the typical idiot knows nothing, does nothing, and this typical idiot
is usually even met with except in anencephalous monsters."—"The term idiot might be advantageously replaced by that of feeble-minded. Insanity, being in fact mental feebleness, depending on a malformation or disease of the nervous centres taking place anterior to birth or during the developmental period of childhood and youth. Idiocy is therefore distinctly differentiated from other forms of mental alienation. The term imbecile should be applied to the cases of dementia which abound our mental asylums and who are in an entirely different category from the feeble-minded. They are gradually deteriorating in physical, mental and moral condition." Mr.LinkId has considered it necessary to quote Dr. Langdon Down's remarks in extenso in order to show that the subject now being treated is one which demands reconsideration. Dr. Ireland's definition must be regarded as being too vague and insufficient for practical use. It helps us little to say that an idiot is one 'mentally deficient or extremely stupid, and that an imbecile is one less mentally deficient without giving any test by which the classes can be separated.
I cannot, in the least, homologate Dr. Langdon Down's views, and indeed consider that if they were accepted, much confusion would result not only in the nomenclature of the special classes now under review, but also in that of the insane classes. Dr. Down proposes to abandon both terms idiot and imbecile as applied to mentally feeble children. He would entirely abolish the term idiot mainly for sentimental reasons, while he gives us an equivalent and to consider that the term imbecility should supplant or become synonymous with the necessary and perfectly scientific terms senile dementia and senile atrophy. To possible advantage would result from this, but rather disadvantage, and I can neither find nor imagine any warrant for the change. The elements of our idiopathic ailments are already sufficiently provided with nomenclature and for the idiopathic and imbecile groups new terms would be required which would be mere synonyms of those which they had been deprived.
As regards the sentimental reason for rejecting the word idiot because it is often misused, i.e., used as a term of reproach, it should be remembered that for young persons of complete mental incapacity, some of the Aenigmatism would be required, and that this would be equally liable to misuse.

I propose to arrive at any clear idea of what the terms idiot and imbecile actually mean, in what sense we cannot take a comparative view, we must consider the mental capabilities of young persons in several and form our conclusions from their relative attitudes towards defective successes. It will then be found that they naturally fall into three groups.

1. Children of raised mental endowment but who are all educable by ordinary methods. = THE NORMAL GROUP.

2. Children of raised but all of weak mental capacity and who are educable only by special more elementary methods. = THE IMBECILE GROUP.

3. Children in whom the mental incapacity
is so profound that they are practically unable to benefit by any means of education. The child is then

There are three classes as of course vastly unequal in numbers: we find a great

Normal or Educable Class, a much smaller

Imbecile or Partially Educable Class, and a very small

Idiot or Ireducible Class.

When we then arrive at definitions of idiocy and imbecility the impossibility will be recognized of formulating any satisfactory classification. As to the imbecile children, based on particular diseases from which they suffer, or may have suffered, heredity or ailments which they present, or isolated facts in their personal or family history, in the larger Normal Groups, such classification is not attempted. Idiocy and imbecility and normality are as contrasted with these are terms indicating mental condition or potentiality, and it must be understood that if we go to divide Imbecile Children by the factors we have
alluded to we should be able to do the same with normal children; we are able to suffer from many of the diseases and physical defects which are used as bases of classification in the few highly endowed groups.

It may be urged that a classification may be of much value in one group and may not be required for another; that for the normal child, although in his class, the amount of intellectual achievement varies as much as among the imbeciles. In some cases, grouping does not exist. The writer, however, after observation and treatment of a very large number of cases, and over 600 cases of imbecile children, has not found their usual classification of value either in aiding to estimate the amount of imbecility, or in helping to judge, in regard to individual cases, to which class of mental deficiency, may include anything from profound idiocy, as we have defined it, up to intelligence approaching the normal.
standard, and the same may be said of his microcephalic, brachycephalic, epileptic, paralytic, and other groups. As regards epilepsy, the sufferers may be very slight, very inefrequent, and mentally unimportant, indeed may be recovered from in one, while in another they may be so frequent and disastrous, as to throw the sufferer from the normal to the imbecile, from the imbecile to the idiot class.

Another reason for refusing to accept Mr. Ireland's classification is that very many individual imbecile children might be placed in two or more of his groups. Thus we often find congenital imbecile who are also epileptic, and I have more than once seen epilepsy associated with paralytic. One would be quite unable to determine in which of the classes to place such subjects. Similarly, we have seen children who are congenital or epileptic.

The chief reason in rejecting the classification however, is that it directs inordinate attention to single features
which certain children may present in common and leaves out of consideration the thousand other features in which the components of each group may differ. It is in fact a tabulation of diseases or defects and not a classification of children.

Dr. Langdon Down's 'Kynic Classification' is entirely based on the curious fact that many imbecile children of Caucasian race have a striking facial resemblance to the type of the Mongolian races. This resemblance is most interesting but it has not been discovered to have much scientific value. His grouping into Congenital, Accidental and Developmental Classes refers only to the origin or history of the mental deficiency and not to its nature or amount. The writer has found after prolonged observation and study of the idiotic and imbecile that for them as for the normal group there exists no easy or royal road to their satisfying classification. Children
of mental incapacity must be classed by the same methods as those that are used in children of mental capacity. They must be individually studied.

The family, personal and social history should if possible be ascertained and for the diagnosis of the imbecile such history is often of great consequence. Further the diseases from which they suffer or have suffered should be noted and those may be causal or may gravely affect the prognosis of individual cases. Physical peculiarity or abnormality should also be taken into account, such having been often found to accompany mental abnormality.

I do not at all mean to indicate that children of the idiotic and imbecile classes are incapable of subdivision and that by an infinite number of tests, but am strongly of opinion that there are in the great part purely artificial or pathological significance and have little relation to the mental condition.
Until such time as the infinitely varying Normal Group has been analyzed into definite scientific classes, based on the nature and amount of their mental normality, the physician who has the care of the idiotic and imbecile groups may be excused from swerving from his rigid arrangement of his classes. The mental capacity or incapacity must be studied irrespective of the factors many of them unknown to us which only have been concerned in the origin of the condition.
Physical peculiarities and diseases frequently accompanying mental weakness.

When we consider that the defect in the mental capacity of the brain now being treated is most usually the consequence of arrested growth or maldevelopment of the cerebral centres concerned in ideation, and when we further consider that these centres form but a small part of the total organism it will become evident that the abnormal tropism is very likely to implicate other parts and centres. This very frequently occurs and accordingly we often find many physical deformities and defects associated with mental imperfection.

It will be of much importance to keep this general tendency to defect well in view, when we come to consider special instances of abnormality in special areas and organs, and to compare these with the same structures in the normal
J. C. at 18 Years

Illustrates a typical expression of faulty
2 symmetry of contour and face.
Group which has no such tendency to defect.

As regards stature, the height of the idiot and imbecile is generally much below the normal average. Among idiot imbeciles, although not in other groups, actual dwarfishness is the rule. It is better sometimes met with and is illustrated in the Mongolian (1) whose photograph is shown.

The bodily contours very generally lack the grace and symmetry which we usually associate with childhood and youth. Positive deformities in the shape of paralyzed and atrophic limbs, genu valgum, talipes, and similar defects are, as a rule, found of 141 boys at present in Larchmont Institute. One exhibit genu valgum = about 5

1. Genu Valgum = 0.71

1. Talipes valgus = 0.71

3. Talipes varus = 2.12

The disproportion between the number of cases of genu valgum and varum is somewhat remarkable. One boy has
E. G. age 8 years
Illustrated by Sarah J. Kemble
Right genu valgum and talipes valgus.

A population of 98 girls:
1. exhibit genu valgum - about 1.30%  
2. exhibit talipes valgus - about 2.6%

We have 3 female inmates showing genu varus & talipes valgus

Paralysis of limbs - the result of acute enteritis, sciatica, poliomyelitis, or other causes of lesion of the motor centres, are very often found in children. Generally these cases are paralytic and consequent atrophy is usually as would be expected in young children in the early stages.

In our present population of 141 girls, we have 10 - about 7.08% paralytic cases.

- 3. 3.5% new right infantile paralysis
- 3. 3.5% left infantile paralysis

Out of 98 girls we have four - 8.1% of paralytic cases, viz.

2 exhibit right infantile paralysis
1 exhibit left infantile paralysis.
1 exhibit both

We left being the more pronounced.
As we have been children who exhibit...
8. 8. at 12 years
illustrates
1st: Infantile Paralysis; and
2nd: Epileptic Telotroche
Infantile paralysis, have been placed by some authorities in a separate group, and
labeled as if it possessed other characters
in common. My experience, however, seems to
prove that the presence of paralysis affects
little indication of the general physical
or mental condition. The following cases
may be given in order to show the amount
of general difference in different individuals
of the paralytic group.

Case (1). M. B. male as 1 1/2 year, right infantile
paralysis, brainee phalic vision defective,
mental condition that of
lunacy. No sign of intelligence. Progress as
regards educative capacity extremely
bad.

Case (2). E. J. male as 8 year, left infantile
paralysis, brainee phalic, features inclining
to the mongolian type, mentally defective,
lower degree of imbecility, can speak
imperfectly, taught to read simple words.

Case (3). J. M. H. female as 18 year, right
infantile paralysis, when admitted Sept
1882 in fair bodily condition but brainy in
a state of chronic enania, can now
Manic-depressive, indicated by dreamy dreams attended at intervals of a few minutes or seconds, moral delirium, language very objectionable. Nov 1892 a faint, delirious young lady, mania and mental delirium had practically disappeared. Plays the piano well and is analysed. Hand, parents intend that she should now join her family circle.

I need only allude to the well-known fact that infantile paralysis is often seen in individuals of high intellectual attainment. Indeed it is now illustrated in one of the most powerful and prominent of European Monarchs.

While treating of gross physical defect, it may be well to mention that sometime many forms are shown in the same child, Case 2 J. F. female at 12 years, cranial asymmetry right, general eminence very prominent, palate very high and gumma. Infantile paralysis affecting both arms left more completely, arms less so, right Valipes varus, Duques de la.
I. A. at 14 years
illustrates bodily symmetry and aspect of great intelligence, Camden with composure.
Before beginning to enumerate defects of general condition and of individual organs it will be necessary to note that the imbecile event the idiot child sometimes although rarely resembles in appearance and facial expression the better types of the normal group. The head and symmetrical development, well set features and eyes which are occasionally seen during the childhood of the mentally deficient might easily suggest the possession of the at least average degree of intelligence. A very good example of how exceptional cases is found in Case (5) A. D. aged 14 years. Physical condition exceedingly good. Facial and ocular expression mild and apparently very intelligent. Mentally a marked inability can be taught to read and write at all but at a great expenditure of time and labour. Moral sense very defective is the stoic maniac.

Such handsome children have generally
M. E. at 13 years
Illustrates Obesity "Polyarctia"
been born with apparently normal physical and mental potentiality but have been the subjects of infantile paralysis or other cerebral palsy, sometimes shortly after birth but more usually at the period of first dentition.

It must be confessed however that among the imbecile group, while physical beauty is occasionally found, with Adolphe Zongor Standards of beauty is much more frequent.

As regards the General Bodily Nutrition although we naturally often find it very deficient in the children of the poorest classes when they are admitted into the Institution yet we usually also find that the Digestive Functions are well performed and that we can remedy Malnutrition by liberal and judicious Dieting. Indeed, in a considerable number of our subjects there is a distinct tendency to Obesity, of an incorrectly termed Polygsnicus in very rarely accompanying Stock Muscular development. In children of marked Tumors or Muscular Diathesis, the Nutrition
may remain very imperfect.

The muscular system is very generally ill developed, characterized by lack of tone and atrophy. This can be largely explained by the relative inexperience of purposive muscular action, especially in the lower groups of limbs, and defects of fingers and of very thin, exhibit contractures and an ak of very feeble pectoral power.

Contracture of joints with secondary ligamentous hypertrophy is often seen, apart from the dextrose fatty paralytic cases. An extreme example of this has been recently sent to the Institution.

Case (6) A. J. J., male, aged 11, microcephalic. Prognathous, teeth good. Normal incisura and implantation phalx well formed. No incoordinate arcing. General condition of emaciation, recent flexion and contracture of elbow, wrist, hip and knee joints. Mental condition that of poverty can only indicates pleasure and displeasure, but not in a greater degree than is shown in many of the lower animals.
Rhythmic movements of the body as balancing and lateral swaying, impulsive movements at the wrist and finger joints, or peculiar movement, as of pinning the face are often seen in our groups. Of our present population 8 girls = 10.26% and 3 boys = 2.125% exhibit these movements in marked degrees. They are most usually seen in children of the lower mental grades and sometimes seems to represent the greater part of the voluntary effort of the child.

Peculiar attitudes unconnected with paralysis or contracture, may be persistently assumed. I. G. Case (4) P. M. male aged 14 years, microcephalic, palate high, left genu valgum, habitually stands in attitude of question.

In this connection it may be added that the power of assuming the erect posture and of walking is generally late to appear. Instead of ranging from the ages of 12 to 18 months as in the normal, in the imbecile groups these powers are rarely developed until the 3rd or 4th year.
S. G. at 11 Years
Illustrates Morocephaly
Arian Features.
As might be expected, the cranium very frequently exhibits abnormality of size and contour. Necrophagy is common especially in the lower grade of idiotic and imbecile. Characteristic cranial measurements of the class are found in (Case 8. T. C. male aged 12 years.)

Circumference of cranium 18.25 in.
Biparietal diameter 5.25
O. Parietal 5.375
An. Parietal 6.5

Mental condition that of idiosyncrasy.

(Case 9. S. male aged 13 years.)
Circumference of cranium 18.25 in.
Biparietal diameter 5.25
O. Parietal 5.375
An. Parietal 6.5

Mental condition that of idiocy.

(Case 10. H. B. male aged 12 years.)
Circumference of cranium 19.3 in.
Biparietal diameter 4.12
O. Parietal 5.62
An. Parietal 6.62

Mental condition that of marked imbecility. Relative capacity very slight.
B. W. age 9 years
Illiterate 1 Macuaphala
2 Negroid Features
Case (11) Male. Age 14 Years

Circumference of Cranium 18.75 in.

Biparietal Diameter 4.0

Bi-parietal 5.25

Antero-posterior 6.5

Mental condition that of Mecium Imbecility has been taught to read simple words.

From the foregoing, which have been selected as good examples of the condition, it may be inferred that Microcephaly is usually associated with a very defective mental power, and with Brachycephaly. In the higher Imbeciles, where the cranium generally approaches the normal standard, Dolichocephaly is the rule.

Macrocephaly is found, but much more purely, than the reverse condition, it may be illustrated by

Case (12) M. B. Male Aged 15 Years

Circumference of Cranium 23 in.

Biparietal Diameter 6.5

Bi-parietal 6.25

Antero-posterior 8

Mentally a lower grade of Imbecility
A. S. at 13 years illustrates Mongolian features with obliquity of eyes.
Macroecephaly is sometimes found to be the result of Hydrocephalus, and these subjects have been placed in a separate class by Dr. Ireland and others. A typical case is

*Case (3) C. J. Male, aged 11 years*

Circumference of Cranium 32.25 in.
Beinernal Angular 
Bifrontal Angular 
Bifrontal
Antrum Parietin
Mentally a medium grade of imbecile.
It will be observed the foregoing case of Macroecephaly also exhibits hydrocephaly. Superficial Hydro and Asymmetrical Crania. The asymmetry usually caused by unequal development of the frontal and parietal bones are also much more common than in the general population.

The eyes in one group the "monocular" appear to be obliquely placed. Thalassus usually internal vertex in about 4% of our inmates. Hystrynus is seen but rarely. Vision is absent or extremely imperfect only in about 2%.

The nose is usually short in one
groups always do. In cases the mal-
formed, asymmetrical or implanted
jaw back. The lobule is sometimes ill-
developed or may be very large.
The oral cavity, its boundaries and
contents frequently exhibit interesting
deviations from the normal standard.

The occurrence of some of these has long
been recognized, and their importance
as least in their relation to the accompanying
mental condition, has perhaps been
overestimated.

It is well known that the palate
is often of peculiar conformation in the
idiotic and imbecile groups. Of only
90 out of a total of 1974 cases which I
examined while preparing a paper on
the subject did I find a fairly
well-shaped normal palate. In 54% or
5-4% of the cases it showed distinct
abnormality. This sometimes consisted
merely of horizontal or vertical, usually
associated with narrowness as if it
had been originally formed for a wider
space than it is had come to occupy.
- The vaulted palate. It was sometimes asymmetrical in lateral surfaces exhibiting different degrees of concavity or wave plates - concave, flat, convex or concavo-convex.

A well marked and frequent abnormality is the V-shaped palate where there is undue vaulting of the palatal arch and in the pronounced chamfer both lateral surfaces are practically plane. A palate is roughly X-shaped as seen from below and is often also L-shaped as seen from the front. It is wedge-shaped in two directions. In certain cases of extreme deformity, the fundamental deviation appears to lead the production of the V-shaped palate, but the median nature is unknown so that it is also asymmetrical.

In cases of abnormal anomalies and vaulting the palatal mucous membrane is often much folded or corrugated. This would seem to show that the condition is not sensitive but has been induced during the development of the child.
Dr. Clowston in his Morim Sansen in 1890 "The Genesis of Development" which has been recently published discusses with characteristic ability and thoroughness the question of the condition of the palate in different classes. He recognizes three varieties:

1. Normal or typical with low but regular wide arch.

2. The neurotic with more or less of a patch and alveoli running more parallel for a greater distance.

3. The deformed of various shapes but all abnormal includes V-shaped and asymmetrical palates. As the result of a very extensive and carefully conducted research a small part of which the writer had the honor of furthering and of seeing in press. Dr. Clowston found that of 6,104 of the general population 40.5% had typical palates.
40.5% had Atrophic Palates.
19.0%  " Reformed  "
N.B. As 604 cases of the general population were practically selected, consisting of officials and servants in an Asylum, so an exceedingly good physical development of boys in an advanced school and of patients of a Lodging Edinburgh Hospital who may fairly be taken to belong to the middle and upper classes the percentage of physical defects of any kind should be small. It appears obvious that the terms typical and normal as applied to the form of palate which is found in only 40.5% of such consecutively typical and abnormal subjects may be reconsidered.

Of 169 10th and Umbilical examined he found that
11% had typical palates.
28%  " Atrophic  "
61%  " Reformed  
A. Mounster's standard cannot be higher than mine as I have concluded that only 5-6% showed marked abnormality.

From the foregoing data it is evident that abnormal and reformed palates are vastly more frequent in the Atrophic
and imbecile than in the normal classes. What has usually been accepted as an obvious inference from this, that parental has an essential relation to mental defect, deserves careful scrutiny, and the following considerations will in my opinion show that it is incorrect.

1st. Average mental soundness may coexist with deformed palate. A large proportion of 19% of the children's cases of the general population exhibited this condition.

2nd. Imbecility of any grade, even down to profound idiocy, may coexist with normal palate. As a striking example of this I may allude to the American deaf-mute idiot (case 6) previously cited.

3rd. The classes mentally normal have a general tendency to physical deformity, although individual members of the group may be physically abnormal.

4th. Idiotic and imbecile classes have as we are endeavouring to show a great general tendency to deformity, the perversion of bodily growth.
These facts seem to indicate that one special physical deformity which may co-exist with mental incapacity
and give as certain indication of the degree of mental incapacity. If the comparison were made between idiots
and imbeciles, and a corresponding num-
er of children mentally normal
but who were the subjects of physical
Deformity, and deviations of Growth
the disproportion as to the condition
of the palate would be found to
be greatly diminished, if indeed,
it did not disappear.

The tongue is sometimes abnormally
large, is often very rough in surface from
hypertrophy of papillae, especially the
fungiform and its upper surface is often
deeply fissured.

The teeth are rarely perfect; they
exhibit distinct abnormality in over 50%
of our cases. They are very often crowded
and implanted in different planes. We
often find wide diastema between
the central incisors. The lateral incisors
and canines, and the canines and premolar.

The canines may be very long and tooth-like.

The teeth are sometimes defective in number, the most common defect which is at present represented in the Farbar

Injunctions.

The teeth are very prone to premature decay, they often show pitting of the anterior enamel and demineralization of the

Free Margin, suggesting infantile weakness and disease. When the early

History of the idiotic and imbecile is ascertained, we usually find that

The first dentition has been much delayed, and this also obtains in regard to the second dentition.

It is convenient at this point to refer to certain functional defects which are intimately related to the condition of the mouth. The most important of these is the faculty o

Speech, which is absent in 19% of our present male inmates and in 24% of the females. This is a somewhat trac
Proportion than we usually have; two years ago I found that 31% of the boys, and 34% of the girls could not speak. A further curious point noted by me in the proportion of girls in them is also present in a nearly perfect degree in a larger proportion of boys. Of our present population about 3% of the girls may be said to speak perfectly, but only about 1% of the boys. Curious anomalies of speech are sometimes encountered. Thus one of our girls can articulate only one word: "Pieye". One can speak very imperfectly but only in a whisper; one can speak fairly well but only in a whisper. A most curious anomaly is exhibited by a girl who has undergone severe mental degradation in consequence of severe epileptic seizures. She is now quite idiotic, unable to speak a single word, but when the epileptic condition is dominating her she sings songs she had learned in earlier life...
in good tune and time, and with perfect articulation of the words.

The defects of speech in the imbecile have been associated with:

1st. Defects in the formation of the mouth and larynx, and of their muscularature.

3rd. Absence of ideation.

In the typical idiot, speech is always absent.

Salivating or ex oral salivation is often seen, especially in the lower mental grades. It usually is the result of want of tone and indordination of the oral muscles. It is sometimes excessive, and in an idiot now under my medical care the quantity of liquid slavered is greatly in excess of the urinary excretion.

Sialulation is another real curious phenomenon and is almost always present (Case 14), a male aged 18 years, although he has the aspect of a badly developed boy of 11 or 12 years, is profoundly idiotic and epileptic, had seizures every 24 hours, mainly nocturnal, begins to precipitate and culminate about 10 minutes after each spasm.
A. M. as 19 years
illustrates Avian features
As I have already indicated, the general facial contour, apart from the depression of sinciput, is of no decided intelligence, is often of interest. A peculiar "bird-like" type of feature is sometimes met with. Here the cranium is generally small, the face narrow, the nose thin and pointed, the forehead and chin receding. The photograph of the microcephalic idiot (case 8, I think) shows the condition to some extent. The subject whose photograph is given on the opposite page is not only dwarf in feature, but is as far as I am aware, unique in being also dwarf in habit. His chief occupation, indeed, his chief occupation consists of making a kind of rude nest with any material at hand. He then stands gazing on this intensely, while clucking like a hen to new chickens. It will be seen that this is a case not only of mental imbecility, but of superaddded delusional insanity.

By far the most common abnormality of feature is that which forms the
J. S. at 12 years.

illuminates Mongolian features

2 Absent
starting point of Dr. Langdon Down's
Empire classification - the Mongolian
or Kalmyck type, of which I give
photographs of some characteristic exam-
plles which are at present in the national
Institution.

The Mongolian, more properly Mongoloid
race, is, has been often, and well described
perhaps best by the first record of the
type with an all black cephalic occiput
little developed, hair is usually black, in the real Mongol type the
forehead and postcranium, the eyes
are obliquely placed, external canthi very
narrow, jowls and beard wrinkled transversely
from over use of occlupta - frontalis in
opening the eyes, tongue large, supine. The

small skin clawing.

A peculiarity of this type of which it has been several cases
but this has been noted is where the
hair is very dark and thick. The eyes
very oblique, the skin pigmentation, both
downward and deflection of the angles of
A. Y. at 10 years
Illustrates Mongolian feature
The growth, giving a curiously foreboding aspect.

The Mongolian type is always more fully represented at Larkard in our female population of whom about 1/4% are usually found, as against about 0.70% of the male inmates. The usual proportion in the total population is thus about 9% of Larkard Town finds about 10% of Mongolians among the imbeciles he examines. The individuals of this type are generally of low vital power, the circulation defective, and there is a great tendency to low forms of inflammation of mucous membranes, as recurrent bronchitis, chronic bronchitis, OPH Neuritis, and allied complaints. The faculty of age is little developed, very few reach adult life. They have been noted to be often the subject of tubercular disease. I have found that while 34% of all the deaths of any idiotic and imbecile cases have been due to various forms of tuberculosis, they have accounted
A. D. at 16; Open Illustrations, Mongolian Features
For 50% of the Mongolian deaths, the total deaths in the Mongolian group have been 19% of the total. A class is a very well marked one and is one concerning which details of all kinds are of the utmost importance. It may be useful to give the causes of the deaths in cases we have treated.

Tuberculous Disease: General Tuberculous 1 case; Pulmonary 1 case; Lungs 1 case; Peritonitis 1 case.

Non-tuberculous Disease: Scarlet Fever 1 case; Measles 1 case; Enteric Fever 1 case; Malaria 1 case; Diphtheria 1 case; Glandular Gonorrhea 1 case; Poliomyelitis 1 case.

When enquiring into the family history, I have very often found that the Mongolian came from the offspring of genetic, tuberculous or other work parents. In regard to a well-marked example which I found in my private practice, I noticed the Aegaeas, given in the appended chart. I was surprised...
J. L. at 10 years
illustrates Mongolian features.
<table>
<thead>
<tr>
<th>Disease</th>
<th>Maternal Descent</th>
<th>Paternal Descent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bacteria</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Polio</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Still Birth</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Mongolism</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

N.B.—In this Chart only those ciphers marked ☐ or ☐ represent individuals. Vertical lines denote that the individuals which they separate belong to families related to each other by marriage. Individuals placed side by side without intervening mark are members of the same family; in those the order of seniority is preserved, from the eldest placed on the left to the youngest at the right. The parallel rows of ciphers marked on the right side 1, 2, 3, 4, and 5, respectively represent generations to which the great-grandparents, grandparents, parents, patient, and patient’s children respectively belong. Individuals affected with noteworthy disease are marked with a cross and numbered, the disease being indicated by the corresponding number on the left side of the chart. The mark X is placed below patient.

J. L. at 10 Years
Illustrates Mongolian Features.
as to hereditary history.

It is a curious fact, which has perhaps not hitherto been noted, that although very many congenitally idiotic and imbecile children are epileptic, yet the Mongolian class, who are undoubtedly a section of the congenitally defective, are very rarely epileptic, and as far as my personal observation goes, immune from epileptic spasms, except in cases of mongoloid offspring. These mongoloids are very rarely represented in such a form. As an example of the Negro type I may refer to Dr. M. (case 12) whom I have already given as a good illustration of Negro epilepsy.

Epilepsy is by far the most important of all the brain diseases from which the members of the idiotic and imbecile classes suffer, and is the only one which need now be specially noted. It is very frequent. A recent 282 case of boys at the Hartford Institution = 6.9% and 6 cases = 20.5% are epileptic. This is rather below
our average proportion, as I have usually
found that rather over 22% of our
population were epileptic.

The disease may be associated with
any form of mental incapacity, from the
profoundly idiotic, puerile, and subject
I have already mentioned up to cases
showing a degree of intelligence reach-
ing the normal standard. He frequen-
tly and apparent severity of the seizures
has sometimes as close connection with
the amount of mental degradation.

A boy now under my care, Mr. [illegible]
physical pathological condition
other than epilepsy, and who entered
During the past seven years has de-
teriorated from marked imbecility to
his present idleness, has seizures only two
or three times during the year, while a girl
one of our most intelligent inmates,
who has been taught to read and
write well, and who is clever at
sewing and other domestic work,
has severe epileptic seizures almost
every day. From this it will be seen
that the disease cannot be well taken as a basis of classification.
At the same time it should be understood that epilepsy, as we find it, is more usually associated with the lower forms of mental weakness. As a tangible demonstration of this, I may mention that in one insane ward, which now contains 22 inmates selected without any regard to epilepsy, but solely on account of excessive mental and physical incapacity, the proportion of epileptic cases is 50%. The disease is also a very frequent cause of death among such cases.
The Causes of Death of Imbecile Children.

As Guardians of Children of the idiotic or imbecile classes, very often obtain information from the Physician on the subjects of the chances of longevity of their charge and of the diseases from which they are most likely to survive or to which they are most likely to succumb. As the opportunities for collecting exact data on these subjects are very rare in this country (as regards Scotland practically unique), I have thought it would be useful to give details of the causes of death of the last hundred cases who have died in the London Institution for Imbecile Children.

On the 6th August 1879, the number of children in the Institution was 906. From that date until the 23rd February 1892, 514 new cases were admitted, giving a total number of 613 cases treated in about 12½ years. Of this 613 cases, exactly
100 have died in the Institution. It should be understood, however, that this number of deaths does not adequately cover the total mortality of the 6013 cases treated in Larbert during the past 12½ years. During the same period 302 have been discharged from the Institution and details cannot be given concerning the children after they cease to be under our care. Some of those discharged have, to my knowledge, died, and it will be at once seen that had the after history of the children been traced, the number of deaths would be largely increased.

Deaths from Diseases of the Nervous System

As might be expected from our population, diseases mainly affecting the nervous system have decimated, for much of the mortality of our inmates, and of the 106 deaths now being treated of, I have been caused by diseases of this nature.
Of all nervous diseases by far the most important and-abhorrent has been Epilepsy, which has caused 29% of the total deaths.  

Epilepsy  

24 boys have died of this disease and they may be thus classified as to age at death:  

<table>
<thead>
<tr>
<th>Age of Death</th>
<th>Number of Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 years of age</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>13</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>4</td>
</tr>
<tr>
<td>15</td>
<td>1</td>
</tr>
<tr>
<td>16</td>
<td>5</td>
</tr>
<tr>
<td>17</td>
<td>3</td>
</tr>
<tr>
<td>18</td>
<td>4</td>
</tr>
</tbody>
</table>

5 girls have died of Epilepsy.  

2 at 8 years of age  

<table>
<thead>
<tr>
<th>Age of Death</th>
<th>Number of Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>16</td>
<td>1</td>
</tr>
<tr>
<td>17</td>
<td>1</td>
</tr>
</tbody>
</table>

It will be seen that the average age of the boys who have died from Epilepsy
Has been 14.63 and of the girls 12.2 years.

When it is considered that 22% has been found, from frequently collected statistics, to be a fair usual percentage of the children treated in the infant institution, who suffer from epilepsy and cerebral palsy, children are liable to succumb to other diseases. The large proportion who die directly of this disease will be more clearly accentuated.

Chorea

1 boy died at the age of 16 years from the exhaustion caused by this disease, after an illness of three weeks duration.

Cerebral meningitis and cephalitis

Of these diseases 7 have died

Being 4 males

2 at 11 years of age

2 at 13 years

and 3 females

1 at 10 years of age

2 at 26 years

The two females who died at the
age of 29 years were Hicks and both belonged to the idiot or totally ineducable class. They were kept in our Institution on the urgent request of their guardians.

Acute Endemic Disease
2 males have died from this
1 at 11 years of age, and
1 at 13 years of age.

Cerebral Apoplexy
1 male at 3 years of age.

Cerebro-Spinal Degeneration
1 male at 12 years of age.

Deaths from Specific Infections Diseases
9 per cent of the deaths were under consideration have been caused by infectious diseases. The specific disease and the sexes and age of those who have died from them have been the following:

Enteric Fever
1 male at 14 years of age
1 female at 12 years of age.

Scarlet Fever
1 male at 12 years of age and
Female at 9 Year of age
Measles
Female at 8 Year of age
Diphtheria
Male at 10 Year of age
Female 10

Deaths from Tubercular Diseases

Although the tubercular diseases are now included by many in the class of infectious diseases, it may not be considered unscientific, and it is certainly useful for clinical purposes to treat them as a separate group.

It has long been recognized that tuberculous children are very liable to suffer from pneumonia or diseases of a tuberculous nature and that many of the class susceptible to such diseases. The cause of this liability is doubtless the abnormal nutrition of the limes of such cases, rendering them unusually favorable to the reception and
Propagation of Pathogenic microbes of Mycobacterium tuberculosis may be regarded as the most insidious. Of the 100 children whose deaths are now being treated, 47 have died of tuberculosis and 4 have died of others. The cause of death of these 51 was classified as general tuberculosis. 4 boys have died from this 1 at 13 years of age

1  15

2  16

4 girls have died from the same cause
1 at 12 years of age
2  14
2  15
1  19
1  20

From the above details it will be seen that general tuberculosis has been the cause of 11% of the deaths and that the average age at death has been a little over 15 years.

Phthisis Pulmonalis
Of diseases mainly affecting the Respiration
Organs, distinctly tubercular in nature, and which have generally had their origin in Bacterial Pneumonia, 15 boys have died.

3 at 11 years of age
1 at 12
4 at 13
1 at 16
1 at 17
1 at 19

7 girls have died of other causes.

2 at 12 years of age
2 at 14
2 at 15

From the foregoing it will be found that the average age at death from Tuberculosis has been a little over 16 years.

Emphysema (Tubercular)

One girl died from the exhaustion caused by this disease at the age of 16 years.

Gules Incertatica

2 boys have died from this disease.
One female has died of Tuberculosis at the age of 14 years.

Deaths from Diseases of the Organs of Respiration (other than Tuberculosis) of diseases mainly affecting the respiratory organs and which have not been found to be Tubercular.

10 boys have died:

- 5 at 9 years of age
- 1 at 11 years of age
- 1 at 12 years of age
- 1 at 14 years of age
- 1 at 14 years of age

2 girls have died:

- 1 at 15 years of age
- 1 at 17 years of age

Koban pneumonitis

2 males have died of the disease:

- 1 at 10 years of age
- 1 at 11 years of age
1 at 15 year of age
The female died of Acute Pneumonia
at the age of 15 years.

Diseases of Organs of Circulation

Two doubtful cases have been referred to
Cerebral Palsy, both (male)
1 at 13 year of age
1 at 14 year of age

Diseases of the Brain

1 Male of unknown age (age of death) at age
16 years of age (under change 1910) at
Female 14 years of age of Cerebral
Palsy at the age of 14 years

1 Male at the age of 18 years
Cervical Syncopal Ataxia, and
As the Result of

Accident

1 Male age 11 years.