

Kerlin (I. N.)

ENUMERATION, CLASSIFICATION,

AND

CAUSATION OF IDIOCY.

BY

ISAAC N. KERLIN, M.D.

EXTRACTED FROM THE TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE
OF PENNSYLVANIA FOR 1880.



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GENTLEMEN: Before presenting to you the topic I have chosen for your address on Mental Disorders, I need to say that the appointment of last year was made on the occasion of your excursion to and meeting at the Pennsylvania Institution for Feeble Minded Children, Media. I gratefully acknowledge the appointment, as complimentary to the work which that State Medical Charity is doing, and therefore feel imposed upon me a presental of some of the features of the special infirmity which it is there attempted to alleviate, as a proper response to the choice which introduces me to your attention and patience at this time. I shall aim to be brief.

NUMBERS OF IDIOTS AND IMBECILES.—Attempts have been made in most countries which take a census of population, to ascertain the number of their idiots and imbeciles. Omitting statistics relating to England, Scotland, etc., I will mention that in the United States the number of idiots in 1870 was 24,395. The total population was 33,592,245, or 1 idiot or feeble-minded person to 1376. The great inaccuracy of this return is known to all who give the subject any attention, and the reasons are obvious upon a little reflection. Parents cling to the slightest promise that a feeble-minded child is not so. Friends are very slow to draw the veil from their neighbors' eyes. Physicians are lenient or mistaken in judgment, either promising that the child will "come all right" at or after puberty; or profoundly mistaking the nature of the case, misname the real condition.

These are a few of the almost insurmountable causes for incorrectness in census returns, which, added to the proverbial carelessness of the whole method, reduce the tables to approximates only.

The number of idiots in Illinois, according to the census of 1870, was 1244. A census taken with special effort to be accurate by the

Board of Public Charities in the same year, drawn from correspondence with practising physicians, made the number 1738; but there were evidences of great unreliability in even the latter, *e. g.*, Cook County (containing Chicago), with a population of 350,236, reported no more idiots than Morgan County, with a population of only 28,500! The result of the investigations of the State Board of Charities of Illinois was a published opinion that the number of idiots was greater than the insane, and that the ratio was at least 1 in 867 of the entire population.¹ Apply these figures to our State of Pennsylvania and we should have at least 3500, of which I think the following computation as to the social standing of the whole number is nearly correct: 717 are in families of ample ability to furnish support, either in their homes or as pay patients in asylums; 604 are in families of well-to-do mechanics, or middle class people, who are endeavoring to keep them at home, because not quite able to support them in asylums at the present onerous charges; 1619 are in poor families, unable to pay for support away from home, yet unwilling to relieve themselves of a painful burden by casting these children into almshouses; 560 are in homes degraded by vice and intemperance, or are at public expense in almshouses, etc.

Now, the census for 1880, planned with some care to get returns on this special subject, contains in the plan a vital error: it demands the number of *idiots* in a community or family; the most offensive popular designation, although the most scientific, should have been avoided; but used, very few parents will acknowledge to the sad possession of an *idiot*, and they will in the returns of 1880, as in those of 1870, be enumerated again in the general population.

In broader statement then, where is this large fraction of our defective population? Shut up either in almshouses with the aged and corrupt, or in asylums with the insane; in our cities confined in upper chambers or to back yards, out of sight it may be, but never out of mind of the stricken parent; in our villages denied the public school, and a nuisance or an annoyance to the community wherever found, wearing out the lives of mothers, and shadowing the highest and lowest homes; depreciating life; retarding work: themselves wretched, and making others still more so, a few only of the entire class receive advantage from even the best appliances of home training and surroundings.

Public conscience has fully awakened to the condition of the insane, a form of disease not so easily veiled, and more dangerous in its manifestations than idiocy. Asylums and hospitals of unstinted

¹ Idiocy and the Treatment of Idiots. Dr. C. T. Wilbur, 1877, p. 6.

proportions and expense are everywhere being erected for the insane; THIS IS RIGHT. How soon will public conscience take up these *innocent victims of our own irregularities and false living*—the feeble minded—and give them “their meat in due season?” That progress is made is shown in this, that in all countries named as having taken special census tables of idiocy, INSTITUTIONS FOR FEEBLE-MINDED CHILDREN have been organized.

In England are three noble institutions, sheltering each from 300 to 800 inmates, besides numerous smaller establishments. In Scotland there are three, in Ireland one, in Canada one. In Australia one was founded in 1872, and has now 160 inmates. In Germany there are fourteen, mostly private. In Saxony four, in South Germany three, and in Denmark one.

In France there are but four, and these are small. As Dr. Seguin states, “France has fed other nations from her lamp, and has let her own nearly go out;” but recently the general council of the Seine has decided to make a colony for the education of idiots and imbeciles, who are to be taught farm labor, and are to be under the supervision of a chief physician, with medical assistants.

In the United States the first institution was opened at Barre, Mass., by Dr. H. B. Wilbur in July, 1848, and within a few weeks thereafter Dr. Howe opened a State Institution at South Boston.

The following table is a list of the institutions in the United States at this date:—

Institution.	Character.	Superintendent.	Organized	Inmates.
Massachusetts, Barre.	Private.	Dr. Geo. Brown.	1848	90
“ S. Boston.	State.	“ Geo. G. Tarbell	1848	120
New York, Syracuse.	“	“ H. B. Wilbur.	1851	280
Pennsylvania, Media.	“	“ Isaac N. Kerlin.	1853	320
Connecticut, Lakeville.	“	“ Robt. Knight.	1858	100
Kentucky, Frankfort.	“	“ J. Q. A. Stewart.	1860	130
New York, New York.	City.	.....	1860	200
Illinois, Lincoln.	State.	“ Chas. T. Wilbur.	1865	290
Ohio, Columbus.	“	“ Geo. A. Doren.	....	480
Iowa, Glenwood.	“	“ O. W. Archibald.	1876	150
Indiana, Knightstown.	“	Mr. B. F. Ibach.	1879	30
Minnesota, Faribault.	“	Dr. Geo. Knight.	1879	20

CLASSIFICATION OF IDIOCY AND IMBECILITY.—The definitions and classifications of idiocy and imbecility are so numerous that in this paper they can receive only a brief notice. Dr. Seguin assumes that the mental and moral features of idiocy are dependent on conditions of the nervous system, and proposes a classification based upon the seat or location of these underlying physical conditions. “The remote cause or source might be physiological or pathologi-

cal, the immediate cause was in abnormal conditions, either of the central nervous masses or in the nervous apparatus radiating from those centres, and which connects them with the individual environments." Proceeding from this, Seguin speaks of the essential forms of idiocy thus:—

"1st. The chronic affection of a whole or a part of the central nervous masses, which is characterized as *profound idiocy*.

"2d. A partial or total affection of the nervous apparatus which ramifies through the tissues and presides over the life of relation, the result of which is *superficial idiocy*."

He also describes a class of cases under the head of "backward children," in whom there seems to be a mere functional torpidity of the nervous system.

He refers at length to the many maladies with which the different forms of idiocy may be accompanied, speaking of them as *accessory*, and predicting that there is a certain relation between these accessory maladies and the primitive infirmity itself. Dr. H. B. Wilbur, whose experience has been larger than that of any other observer in this country, is "disposed to leave the subject of classification on this physiological basis where Dr. Seguin placed it more than thirty years ago."

Dr. W. B. Ireland of Scotland, a prominent writer, has attempted a classification of idiocy based on pathological conditions; he gives his reasons very tersely: "I found it was necessary to have some arrangement in order to say clearly what I wanted to say.

"Coming to the study of idiocy after having gained some experience in medicine, I have from the beginning reviewed it from the standpoint of pathology, and my idea of idiocy is compounded of the following classes which are generalized from individual, existing idiots, who resemble one another by having the same or similar disease, as they resemble the type of idiocy by having mental deficiency along with a corporal disease.

- | | |
|--------------------------|-----------------------------|
| 1. Genetous idiocy. | 6. Paralytic idiocy. |
| 2. Microcephalic idiocy. | 7. Cretinism. |
| 3. Eclampsic " " | 8. Traumatic idiocy. |
| 4. Epileptic " " | 9. Inflammatory idiocy. |
| 5. Hydrocephalic " " | 10. Idiocy by deprivation." |

The terms employed explain themselves, excepting Genetous idiocy, which is made by the author to comprehend cases whose pathology cannot be properly diagnosed until after death, "such as those cases of inflammation of the brain occurring prior to birth." In his further descriptions he evidently remands a large proportion

of his cases to this variety, and it comes to be his *limbus*, for what is at best an obscure study.

Another attempted classification by a celebrated Englishman, Dr. J. Langdon Downs, is interesting to mention; it may be called an ethnic or physiognomical classification. A curious type has been found at home and abroad, which, from the dwarfishness of the individuals, obliquity of the eyes, broad face, loose dirty yellow skin, and squat figure, has been called Mongolian or Kalmuck; a singular co-relation is found in all these cases, viz., a furrowed, uneven tongue which is caused by an excessive fungiform growth of the papillæ. So habitual is this that the observer familiar with the forms and faces of this type of idiocy may hazard the opinion unerringly that the tongue is also malformed. Dr. Downs has noticed what he is pleased to call an American Indian type, and describes others as arranging themselves under Ethiopian and Malay varieties.

Dr. H. B. Wilbur¹ has written interesting papers, endeavoring to substantiate and amplify to our present needs Esquirol's classification of imbecility based on degrees of speech.

There is still another effort at classification not unlike that of Dr. Downs, and even more fanciful, which, based upon supposed resemblance of individuals to lower animals, fosters the notion that idiocy, especially in its most profound congenital types, is an arrest of development at embryonic periods corresponding with a theoretical evolution of the human fœtus, through the stages of life in its lower orders. It is as vague as unpractical, its only value that it furnishes a few appropriate names by which to denominate some of the one-sided and strange anomalies presented in our institutions. It will now be understood that each case of idiocy and imbecility presents a great number of facts on any one of which or on groups of which a classification may be based.

ETIOLOGY OF IDIOCY.—The further remarks of this paper will be confined to the Etiology of Idiocy, as suggested by a study of one hundred cases recently collated in tabular forms from material which has been slowly obtained. I cannot vouch for the reliability of the tables herewith furnished further than to say that great care has been exercised in the choice of our correspondents; the cases are not selected to expound or to antagonize any particular bias of opinion; also any error, originating in unreliable correspondence or

¹ Dr. H. B. Wilbur's paper, Classification of Idiocy, Transactions Am. Assoc., etc., 1879, from which these paragraphs are condensed.

from the intrusion of those elements of coincidence and chance which affect any tables embracing small numbers, may be corrected in the future, as this is a single series of ten (that is 100 of 1000) on which we are now working.

In the descriptions and tables herewith presented I have followed Dr. Griesinger in naming two conditions of IDIOCY—the *apathetic*, and the *excitable*; and under these have classed as IDIOTS those whose intelligence is so slight that we can detect no reasonable basis on which to give anything more than asylum care so long as they shall live; that is, subjects for habit training only.

I have thrown the class IMBECILE into three groups—five or six might have been made—the individuals of the lowest dropping almost into idiocy, are susceptible of some culture of the hand and eye, have a slight command of language, sign or vocal, in communicating their desires and a low degree of attention, imitation, etc. The middle grade imbeciles are much superior to the low, while the high or best grade are possessed of all the attributes of intelligence in a limited degree; they are taught to read and write in some instances fluently, to calculate minor questions of arithmetic, and approach the lower range of common intelligence in their relations to life as found among the ignorant; in their most advanced grade they are lacking only in those powers of discrimination, judgment, and will power, the attributes of a sound man; if they exercise them at all it is in mimicry of associates and superiors, rather than from their personal possession. I also recognize a condition analogous to *excitable* idiocy, among *imbecile* children whose mental powers are susceptible of normal development, but whose will power and discrimination of right and wrong seem to be strangely perverted from infancy. I have chosen to call these, instances of Juvenile Insanity, following for the name the excellent lead of some distinguished writers.

In the tables which follow, these classes and grades are thus represented—

Apathetic idiots.	Middle grade imbeciles.
Excitable idiots.	High or first “
Low grade imbeciles.	Juvenile insane “

Four tables are herewith transmitted—

No. 1 is a birth table of 100 families containing one or more imbecile children, giving the sex, number, and conditions of health of all dead and all living children in the families, together with the ages of parents at the birth of the oldest living idiotic or imbecile child represented in these tables.

No. 2 is an order of birth table, showing the relations in these respects of the 100 idiotic births, with 566 total births, in the 100 families under observation.

No. 3 exhibits sex and condition of 566 children, in the 100 families.

No. 4 is an aggregate table, which, if understood and intelligently used, will show the concurrent elements of sex, social habits, and neurotic or other influences in the production of these one hundred idiotic and feeble-minded children.

Following some of the suggestions of these tables, I present these remarks:—

SEX.—Has sex any predisposing influence in the production of idiocy?

It is a noteworthy fact, that of the applications for admission to the institutions, both of this country and of Europe, the males greatly outnumber the females. At the extensive institution of Earlswood, England, the males are twice as numerous as the females.

Of 1399 cases known to the writer, 925 were males, and 474 females; or as 195.12 to 100.

Independently of the circumstance that, in rural sections, female idiots being more easily managed at home, are consequently less frequently brought to the notice of superintendents of institutions, there is reason to believe, that very many more male idiots are born and survive, or very many more males become so before their fifth year, than females. We find this opinion sustained in the valuable statistics of Illinois, made under the co-operation of the Board of Public Charities, and the physicians of that State. Of 1736 living idiots reported, 1061 are males and 675 females, or as 157.18 to 100; and this against the fact of the greater mortality of male than of female infants. "At almost every step of life," says Dr. Stark, of Scotland, "males have a greater liability to death, and a higher death-rate, than females." This is familiar to all; so that the disparity between male and female numbers in statistics of *living* idiocy becomes still more exaggerated and remarkable. Deafness, muteness, and blindness, when congenital, seem to be more largely apportioned to the male sex.

In Table No. 3 we find there were born in the 100 families under observation 309 males, 239 females, and 18 (stillborn) whose sex was not given, and that of the 122 *idiotic* children, in same families, 86 were males, and 36 females.

We have here suggested—

1st. Has the brain of a male a more complex or higher organiza-

tion, that it becomes more sensitive to prenatal injuries, and later morbid influences? or is it weaker that it yields to them?

2d. Is there a physiological law of limitation tending towards the extinction of diseased or debilitated families and races, one factor of which is *that fewer females are conceived* in such families; and as a corollary of this, what are the facts as to fecundity of these females, and the physical and mental health of their offspring?

There are no statistics of which I have information sufficiently extended or accurate to answer these interesting questions.

TWIN BIRTHS.—Twin bearing has been referred to by Dr. Arthur Mitchell,¹ of Edinburgh, as an abnormality, exceptional and indicative of an imperfect development and feeble organization in the product.

He states that among imbeciles and idiots, a much larger proportion is found to be twin born than among the general community, and that there is a numerical excess of *females* among twins.

We find on examination of 565 deliveries occurring in the 100 families, under our present consideration, there were 7 twin births, which is precisely the same proportion as one twin birth in eighty deliveries, the average in the general population of Edinburgh.

BODY AND BRAIN EXHAUSTION OF PARENTS.—Is body and brain exhaustion of parents a cause direct or indirect in the production of idiocy? That this condition does augment the numbers of the *insane*, is an undoubted fact, and that it enters as the concurrent agency of congenital imbecility I must believe, from the frequency with which the history of our cases is accompanied with melancholy acknowledgments that the mother, during her gestation, was overworked; consumed with anxiety; or had been weakened by the nervous drain of nursings and frequent pregnancies; in short, in a condition of brain and of body unfit to be the repository of a healthy fœtus.

In the history of our one hundred cases, occur twenty-five instances of the disaster of idiocy being partially referred to overwork, over-anxiety, etc.

To those gentlemen who would have us believe that the affiliation between the fetal ganglia and the mother's brain is not of much importance, because they discover no nervous connection, this will be without force; but if we read aright, predisposing causes of idiocy and imbecility may be found in over-exhaustion, ill-health, morbid or real anxieties, fright, or other nervous derangement of

¹ Fecundity, Fertility, and Sterility, by J. Matthews Duncan, A.M., M.D. Wm. Wood & Co., New York, page 68.

the pregnant woman. Perhaps enough importance is not attached by physician or family to the sacred right and requirement of the pregnant female, for prudent and constant attention; at least for the kind of mothers who produce my patients. She is herself seldom mindful of the close alliance between her own body and the developing germ within her, or, if so, is the victim too often of the most fanciful and pernicious delusions. Most child-bearing women are either overworked to drudgery or are insufferably idle; over-exhaustion of the body and hyper-exaltation of the nervous centres are undoubtedly often reflected back upon the child in utero, through an innutritive or a poisoned blood, producing a feeble rudimental system, and leaving mother-marks indeed, which may never be out-grown.

MATERNAL IMPRESSIONS.—Allied with the last is a consideration of the impressionability of the mother's brain to some special object, apprehension or emotion, so strong as to affect the physical integrity of the fœtus. The proverbial garrulity of these midwives' stories, and the absurdity of most of them, has almost remanded this class of narrative to the realm of ghost-lore and fancy.

Without discussing the subject, I will state that in seven instances of our table, the unfortunate progeny is somewhat rationally referred to something of this kind, which, remaining as a scare-devil in the imagination of the mother until the child's birth, has assumed to her mind all the strength of a conviction, that it is the only cause for her child's condition. Without quoting any of the amusing illustrations with which our correspondence is burdened, I will give but one, in which the mother's story singularly suits the object to which it refers; and as I can at this time furnish no hereditary or other very obvious solution of the child's idiocy, it is fair to give it, as a good case for those who respect the theory of maternal impressions sufficiently to suspend judgment while accumulating facts. The following is the mother's statement: "I have always thought Ella's wonderful condition purely the result of my visit to Barnum's Museum in my third month of pregnancy, and that she was marked from my having seen the "What is it," on which my attention was singularly and persistently fixed, and which she resembles. It was during the war, and I was suffering from nervousness and debility, besides doing the most of the work for my family."

I never saw Barnum's "What is it," and cannot corroborate the mother's statement of a resemblance, but am willing to say that it is a good name for my poor little patient.

CONSANGUINITY OF PARENTAGE AS A CAUSE OF DETERIORATION OF OFFSPRING.—Nothing more elaborate on this subject has appeared

since the report of Dr. S. M. Bemiss, of Louisville, to the American Med. Assoc., session of 1858, and I think the statistics of most of our institutions will sustain that report, at least so far as to agree that the child of a consanguineous union is liable in an increased degree to the inheritance of any mental or physical ailment that might enter it by this double current of a single blood; and, further, the belief gains ground that as tendencies to grave diseases may remain latent in families for a generation to develop a fearful growth in a second or third generation removed, so union of cousins, against which there is now no obvious physical objection, is still unsafe; and, as upright people, they are without a moral sanction to inflict an unusual risk of transmitted disease upon a line of children.

From our field of observation—the institutions for imbeciles—there are as yet but scanty returns on this subject. Mrs. Dr. Brown, of the institution at Barre, Mass., reports as follows:—

“Of the 225 defectives who have been under our charge, 8 (perhaps others) were the children of first cousins. As two of these came from the same family they should be reckoned as one in estimating the ratio, which would then stand 1 to 32. Of this number five were epileptics, one a microcephalic idiot of a low grade, the remaining two sickly, feeble children, imperfect, and backward in mental capacity. All the parents were persons of good education, with physical health and vigor fully equal to the American average, and of social and moral standing above the average. Of the whole number of children (31) resulting from these 7 intermarriages, 15 were epileptic, 2 died early of pulmonary hemorrhage, 8 were physically feeble, and 1 was a microcephalic idiot; leaving only 5 (one-sixth of the total) of average mental and physical condition.”¹

Dr. Grabham, of England, physician to the great hospital for idiots at Earlswood, found that in eleven only of 543 cases of idiocy the parents were first cousins; in these no other cause could be ascertained.²

Dr. Howe furnishes the statistics of 17 families, the heads of which were blood relatives intermarried, which are extraordinary, and only to be accounted for by the intense associated heredity of scrofula, intemperance, and misery. “There were born unto them ninety-five children, of whom forty-four were idiotic, twelve others

¹ Offspring of First Cousins. Proceedings of American Institutions for Idiotic and Feeble-minded Persons, p. 59. J. B. Lippincott & Co., 1879.

² Remarks on Origin, Varieties, and Termination of Idiocy. By G. W. Grabham, M.D., 1875.

were scrofulous and puny, one was deaf, and one was a dwarf. In some cases all the children were either idiotic or very scrofulous and puny. In one family of eight children, five were idiotic."¹

To the statistics already furnished we will add our own, as contained in our table of 100 families. Of these, intermarriage of *first cousins* exists in 2 families; of second cousins, 2 families. There were born to these 20 children, of whom—

- 5 died young;
- 1 was epileptic;
- 3 were consumptive and otherwise defective;
- 6 were imbecile;
- 5 were healthy.

It is possible that the influence of consanguinity in the production of idiocy has been overestimated, for it certainly does not account for fifteen per centum of the total number, as has been given. The figures of Dr. Grabham are probably much nearer the truth. Nor must it be concealed that, if into these families strict inquiry were pushed, it would be developed that in the previous generation, if not in the immediate, *concurrent causes* are working parallel with the consanguineous marriage in the production of a feeble-minded child; hence, where hereditary predisposition exists, such marriages are often followed by a fearful entail of misery; but, where no such hereditary predisposition exists in immediate ancestry, we must look on a marriage of the same blood as a dangerous experiment at best, because in atavism we have a long bow which may project a deadly shaft over the generations into the one so interwed.

CONCURRENCE OF CAUSES: PHTHISIS PULMONALIS, ETC. — *That hereditary predisposition* is the stalwart force in the production of idiocy, as of most of the ailments and evils afflicting humanity, has been freely stated, but not so absolutely proven; and, because so many healthy people are born into the world out of conditions most prophetic of evil, many are slow to accept the proposition.

But subjectively it would seem that congenital idiocy is due to a *concurrence of several and not to any single cause* affecting an individual birth; not always striking twice in the same family in the same form of mental disease, because other groupings of these causes during individual pregnancies may induce a miscarriage, a still-birth, a scrofulous or otherwise defective child, the latter possibly to develop a neurosis or an insanity in later life. Nor must

¹ Report of Dr. S. G. Howe and other commissioners to the Governor of Massachusetts, Feb. 26, 1848.

we lose sight of this saving fact already referred to: while the law of heredity is still a very undetermined one, while that of atavism is ordinarily applied and thought of as the bridging over of a disease or of an objectionable physical quality, from a remote generation to that existing, still it is true that atavism works to the highest conservation of the species in the transmission of the *best qualities* of antecedent generations, quite as often, perhaps, as of the bad; thus it is that in some of the afflicted lines in which we are to-day studying idiocy and insanity, we are having many if not a majority of sound children; this fact should point the physician to the importance of an earnest teaching of hygiene in families over which rest the sombre hues of an unpromising heredity.

In no department of medical practice can the physician be more efficient than in the timely and judicious treatment of families of the so-called scrofulous diathesis. Our inquiries show us the presence of phthisis to the extent of 56 per cent.¹ in one or both families ancestral of the idiot child. Apprehending this, all sensible cautions in the family life where this diathesis is strongly present should be taken to avert the greatest calamity and the most intense grief that can enter a home.

Dr. Grabham in his examination of the papers of 249 cases admitted to the Earlswood Institution, finds that in 55, or 22 per centum, there is history of phthisis in the parents or near relatives; in 17 per cent. no other cause for the idiocy is given. The tables presented with this paper if prepared by a special advocate to prove that consumption is the main factor in the generation of idiocy, could not be more startling. As they are the result of careful inquiry without any theory to prove or disprove, I ask for them your respectful judgment in this as in other details which they present.

In the 100 families represented in them and in each of which occur one or more idiotic children and often other defectives, consumption is stated by our correspondents as found in the—

Paternal grandparents	of 17	of 100	idiotic children.
Maternal	“	of 27	“ “
Fathers	“	of 22	“ “
Mothers	“	of 27	“ “
In grandparents and parents	“	of 23	“ “
In grandparents on both sides	“	of 6	“ “

That is, we have consumption as a possible factor of idiocy in 56 families of the 100.

¹ See Table No. 4.

ALCOHOLISM IN THE PRODUCTION OF IDIOCY.—A more difficult question to investigate is the effect of alcoholism in the production of idiocy.

I will quote the English results from a recent publication¹ by Dr. Shuttleworth:—

“From a scrutiny of the histories of 200 male and 100 female congenital idiots the following statistics are derived:—

Of the 200 males, 9 had intemperate parents, classed thus: 7, intemperate fathers; 1, intemperate mother; and 1, both parents intemperate.

Of the 100 females, 7 had intemperate parents: in 2 of these cases the mothers were intemperate, and in 5 the fathers were intemperate.

Of the 300 patients, 16 had intemperate parents, 8 of whom are described as habitual and 8 as occasional drunkards.

Applying to the examination of these 300 cases a method akin to that suggested by Dr. Bucknill for the estimation of the drink-eti-ology of insanity, they may be arranged in the following classes:—

	Males.	Females.	Total.
CLASS A.—Parental intemperance the direct or only ascertained cause	4	5	9
CLASS B.—Parental intemperance complicated by hereditary tendency to insanity or nervous disease	2	0	2
CLASS C.—Parental intemperance complicated by adverse physical circumstances affecting parents (<i>e. g.</i> , ill health, phthisis, and consanguinity)	1	2	3
CLASS D.—Parental intemperance complicated by adverse mental circumstances (<i>e. g.</i> , emotion or anxiety of the mother while pregnant, etc.)	2	0	2
Total	9	7	16

I must remark that it is impossible to single out from our Pennsylvania statistics any of the above-named classes: In our one hundred cases it is already seen that *consumption* is an accessory fact in 56 cases, but probably not the only cause in a single case; for examples see Tables; and so it may be said of alcoholism.

From the following remarks I cannot but believe that Dr. Shuttleworth saw the incompetency of his tables, and the impossibility of making any unit a cause of idiocy. He says: “Congenital idiocy

¹ Shuttleworth, Intemperance as a Cause of Idiocy, Proceedings of American Institutions for Idiots and Feeble-minded Persons, 1879, p. 49.

is probably not, as a rule, the *immediate* legacy of the drunkard to his offspring. Doubtless, however, physical and mental degeneracy in diverse but correlated forms is the *entailed inheritance* of the drunkard's posterity; scrofulous disease, epilepsy, nervous instability, and moral obliquity being, perhaps, the more direct bequests. It needs, however, but one step more, especially if the conditions continue unfavorable, to arrive at idiocy, and thus sometimes in stern literalness is visited the iniquity of the fathers upon the children to the third and fourth generation."

I will add that drunkenness is doubtless a very common factor of PAUPERISM; sometimes its cause—as often its sequence; and MISERY, born of both, by its legacy of instability, lack of force, and feebleness of body, is certainly the most common factor of idiocy.

Statistics confined to the pauper and lowest population would doubtless show a fearful amount of parental drunkenness and vice, against which may be charged again idiocy and all its congeners of low vitality, paralysis, consumption, still-birth, juvenile crime, and so on through the list.

Nos. 7, 18, 39, 61, and 64, etc., of our own tables read through will illustrate this point. But statistics taken from the general population, such as are represented in Dr. Shuttleworth's and our own, will give moderate estimates only for intemperance as a "direct cause" of idiocy.

There is a vast amount of writing which these tables might elicit, but I cannot command more of your time. These one hundred cases are submitted to you, and the method adopted in this investigation. The latter may be quite imperfect, but it is presented to the medical profession of this State for co-operation and for the suggestion of such improvements and additional inquiries as will open this whole subject fairly to the judgment of sanitary science and hygienic medicine.

Permit me to conclude by saying that I think this investigation already foreshadows some prominent points:—

1st. Through the profession of medicine only can come true and saving views as to marriage, child begetting, child rearing, and race culture.

2d. As a very large proportion of imbecile children are first-born, and as a very large proportion of imbeciles are said to have been delicate in their infancy before any imbecility was noticed, may not the skill and attention of the physician be exercised more directly for the instruction of young mothers in the intelligent care of their conceptions and of their babes, especially in families where hereditary tendency to mental and other disorders is known to exist?

3d. It will be seen by our tables that, in 10 families of 100 imbecile children, there have been infelicities and antipathies arising from unsuitableness of the parties in contract to live with each other, and of a character so unfortunate that the parents have been willing to state these as the supposed cause of their children's congenital blight. Is there not in this a suggestion that a better race will be developed when women shall regard a shameful and unfortunate marriage as more shameful than dying unwedded, and when all shall grant a difference of nobility in favor of a cultured and useful unmarried woman over an unsuccessful wife and unfit mother?

4th. If in 25 per centum of idiocy there is maternal anxiety and overtax sufficient to enter as a direct or accessory cause of the child's infirmity, may we not urge as a rule that, during the whole gestative period, safety to the body and brain of the embryo demands exemption of the mother from exhaustive duties and hyper-exaltation of the nerve centres, either in housework or in frivolity, particularly in families of neurotic and consumptive disorders?

5th. That 56 per centum of idiocy should descend from strumous and consumptive families impels the conclusion that any prudent man or woman should avoid intermarriage with this diathesis, if through such union he or she intensifies this condition in a line of children of feeble bodies and frequently defective minds.

6th. That in 27 per centum of cases of idiocy we find as a concurrence *imbecility and insanity begetting idiocy*¹—introduces a very serious question for the law of the State to settle, viz., whether marriage of the evidently unfit shall be tolerated, and whether pauper imbeciles shall continue to entail on the community a burden of woe and expense that heaps up in misery the further it descends.

It seems incredible that, in an enlightened community, a woman should go on giving birth in succession to five microcephalic idiots, three of whom survive to be supported at the expense of the State so long as they shall live.

It seems incredible that a female insane pauper should have been discharged two successive times from a county-house, returning to a drunken husband to become twice enceinte with defective or idiotic progeny.

It seems incredible that a husband living with a wife who is known to be insane should go on bidding into being successive imbeciles and incompetents, apologetically explaining that his wife was in better health while enceinte.

¹ See Table No. 4.

It seems incredible that there should be a county in Pennsylvania where the inbreeding of paupers and pauper imbeciles of the same parentage is possible, until a large family of wretched creatures is issued to scatter and propagate an infamous blood.

All this seems incredible ; but—

“ 'Tis true ; 'tis true, 'tis pity ;
And pity 'tis, 'tis true.”

I thank you, members of the Medical Society of Pennsylvania, for the patient hearing upon a subject in which you cannot as busy practitioners be directly interested, but in which as scientific physicians you must see most surely a broad field in which to make the richest discoveries for the healing of the deepest ills which afflict humanity. Perhaps the faithful study by medical men of the poor idiot and the innocent imbecile will yet lay bare to us the fulfilment of that prophecy of Descartes: “ If it be possible to perfect mankind, the means of doing it will be found in the medical sciences.”

T A B L E S

EXHIBITING THE

CLASSIFICATION AND CAUSATION OF IDIOCY.

TABLE

No.	Sex.	Order of birth.	Grade.	Condition.	History of pregnancy, birth, and infancy.	No. of births.	Brothers and sisters.
1	M.	6th	Imbecile, low.	.....	Mother in feeble health; labor difficult; child did not walk until three years old.	8	5 brothers, 1 of whom imbecile; 2 dead. 2 sisters, one of whom defective.
2	M.	1st	Imbecile, middle.	.....	Mother had family troubles in early stage of pregnancy, requiring her to leave home.	10	7 brothers, one still-born, 3 dead. 2 sisters.
3	M.	5th	Imbecile, low.	Epileptic, hydrocephalic.	Condition ascribed to scarlet fever; convulsions in early childhood	13	7 brothers, 2 of whom still-born, 3 dead. 5 sisters, all dead.
4	M.	7th	Imbecile, first.	Hydrocephalic.	Premature birth from fall of mother. Evidences of hereditary syphilis in child's condition, has now drink-craving.	9	2 brothers, 1 still-born. 6 sisters.
5	M.	1st	Imbecile, middle.	.....	During pregnancy in severe distress of mind because of husband's inattention.	5	3 brothers, 2 of whom consumptive, 1 still-born. 1 sister, consumptive.
6	F.	2d	Imbecile, middle.	.....	A very weak infant, not walking until 3 years. Has valvular insufficiency.	4	2 brothers, 1 defective. 1 sister, dead with phthisis.
7	F.	1st	Imbecile, first.	"Moral idiot."	Mother young and respectable, marrying a vagrant; pregnancy attended with hardships and sorrow.	2	..... 1 sister.
8	F.	1st	Imbecile, first.	.....	Infant strong in body, but singularly quiet. Father deserted his family during this pregnancy.	4	1 brother. 2 sisters, both dead, one with phthisis.
9	F.	1st	Imbecile, middle.	Mute.	Mother ascribed condition to fright during pregnancy. Idiocy observed when 6 weeks old.	4	2 brothers, 1 died with phthisis, 1 sister.
10	M.	1st	Imbecile, low.	Hydrocephalic, mute.	Moth. hard-worked and anxious during pregnancy. Infant very late in walking, etc.	7	5 brothers, 1 died. 1 sister.
11	M.	5th	Imbecile, low.	Microcephalic, choreic.	Purulent ophthalmia and supplemental fingers at birth. Mother easily frightened—miscarriage of twins due to scare.	7	3 brothers, 2 of them still-born twins. 3 sisters, 1 of them dead.
12	F.	3d	Imbecile, low.	Hemiplegic, microcephalic.	Mother in constant dread from father's drunken caprices.	5	2 brothers, 1 defective, 1 d. with phthisis. 2 sisters, 1 twin to case, both dead.
13	F.	9th	Imbecile, first.	Epileptic, hydrocephalic.	Reputed healthy, and free from hereditary tendency. Ascribed to a fall; no external evidence of traumatism.	9	1 brother. 7 sisters, 1 defective, 1 dead, 1 imbecile.
14	M.	1st	Idiot, apathetic	Paraplegic, deaf-mute.	Sickly babe; did not sit alone until three years old.	5	1 brother. 3 sisters, 1 dead.
15	F.	5th	Imbecile, first.	.....	History incomplete.	5	2 brothers. 2 sisters.
16	M.	5th	Idiot, excitable	Mute.	Infantile paralysis at one year old.	7	4 brothers, 1 of them dead. 2 sisters.
17	M.	4th	Imbecile, low.	.....	Child born asphyxiated. Convulsions at 6 days old.	9	3 brothers. 5 sisters, 1 of them defective, and 1 dead.
18	M.	3d	Imbecile, first.	.....	.....	3	2 brothers.
19	M.	2d	Insane.	Choreic, hydrocephalic.	Mother hysterical convulsions. Infancy delicate; scarlatina, etc. <i>Hutchinson's teeth</i> .	3	1 brother, dead, imbecile. 1 child, sex not given, dead.
20	F.	5th	Imbecile, middle.	Epileptic.	Sickly babe.	5	4 brothers, all dead, 2 were still-born, and 1 was defect.
21	M.	3d	Imbecile, middle.	Paraplegic.	.....	7	6 brothers, 4 dead, 1 of whom defect.

No. 1.

Age of parents at birth of the case.		Deceased parents.		Parental.	Grandparental.
F.	M.	F.	M.		
56	32	69	..	Father died of phthisis; mother weak-minded.	Maternal grandmother weak-minded.
26	21	..	..	Imbecility in some members of mother's family.	
38	36	..	+	Father inebriate; father and mother used tobacco excessively; mother died of "brain fever."	
36	32	..	..	Father inebriate; has suicidal mania during excesses.	Paternal grandfather hard drinker.
36	31	+	+	Mother died of phthisis. Father " " "	Paternal grandfather and grandmother died of cancer; maternal grandparent consumptive.
24	26	..	32	Father consumptive, and heart disease; mother died of phthisis.	Idiocy in family of maternal grandfather.
35	19	..	..	Father inebriate and insane; from a family noted for its degradation.	Paternal side vagrant and paupers.
35	25	..	33	Mother died of phthisis. Two of her brothers insane; 13 brothers and sisters died of phthisis early in life.	
35	18	..	..	Deaf-muteism in father's family; epilepsy in mother's family; parents below average standard.	Paternal grandfather inebriate; maternal grandfather died at 35 of consumption.
30	25	..	..	Father weak-minded.	
40	32	..	..	Father weak-minded; mother hysterical. Deaf-muteism on father's side; goitre on mother's.	Paternal grandfather inebriate; maternal grandfather hard smoker.
29	26	..	..	Father dissipated, and "lives on tobacco;" brother and sister unsound; mother's sister epileptic and unsound.	Paternal grandfather inebriate; died of epilepsy. Paternal grandmother unsound mind. Maternal grandfather paralytic.
..	..	..	..	.....	History incomplete.
24	22	..	..	Father drinks to excess; mother's sister weak-minded.	History incomplete.
..	..	+	..	Father inebriate; found drowned.	History incomplete.
38	32	..	..	Father choreic; mother nervous, hysterical.	
31	29	..	..	Father's brother died of phthisis.	Maternal grandmother died at 32 of phthisis.
..	..	..	..	Father inebriate; mother prostitute.	History incomplete.
22	21	23	..	Father excessive tobacco user; died of phthisis; mother's sister has epileptic child.	Maternal grandfather inebriate. Maternal grandmother died young of phthisis.
31	27	..	..	Mother's family dying of consumption; one sister has migraine, one hysteria, and a third epilepsy.	Maternal grandfather epileptic and insane. Paternal grandmother died of cancer.
24	22	..	40	Mother an epileptic, dying of congestion of brain.	

TABLE

No.	Sex.	Order of birth.	Grade.	Condition.	History of pregnancy, birth, and infancy.	No. of births.	Brothers and sisters.
22	M.	2d	Imbecile, low.	Hydrocephalic, semi-mute.	Ascribed to effects of scarlet fever when 9 years old.	6	1 brother, stillborn. 4 sisters.
23	M.	2d	Imbecile, middle.	.....	Convulsion in first dentition, and a "wild" child.	9	3 brothers, 1 defective. 5 sisters.
24	M.	8th	Imbecile, middle.	Epileptic, hydrocephalic.	Mother distressed during pregnancy because of insanity of father. A bright baby with a big head. Smallpox and convulsions when 1 year old.	9	3 brothers, 1 died with phthisis. 5 sisters.
25	F.	3d	Imbecile, middle.	Epileptic, microcephalic.	Condition attributed to nervous shock during early pregnancy	7	5 brothers, 8 dead, 1 of which defective 1 sister.
26	M.	2d	Imbecile, low.	Hemiplegic.	Strong hearty babe; raised on artificial feeding.	3	1 brother, 1 sister, died with epilepsy.
27	M.	1st	Insane.	.....	Is said to have been a bright and healthy infant.	6	1 brother, dead defective. 4 sisters all stillborn (2 of them twins).
28	M.	7th	Idiot, apathetic	Mute.	Congenital idiocy, ascribed to near relationship.(?)	10	8 brothers, 1 idiotic, 1 deaf mute, 1 epileptic, 3 dead, 2 defective. 1 sister, defective.
29	M.	1st	Imbecile, low.	Microcephalic.	History of three idiots in this one family is very imperfect.	14	3 brothers, 1 idiotic, 2 defective, dead. (1 half-sister from mother's first.)
30	M.	1st	Imbecile, first.	.....	Mother attempted abortion, and was unhappy during whole pregnancy. Child did not walk until three years old; spasms at teething.	2	..... 1 sister, epileptic.
31	M.	1st	Imbecile, middle.	.....	Slight spasms at teething; very slow to walk and talk.	3	..... 2 sisters.
32	M.	1st	Imbecile, first	Epileptic.	Child's condition attributed to abuse of mother during pregnancy, and instrumental delivery.	3	..... 2 sisters.
33	F.	7th	Idiot, apathetic	Mute, paraplegic, microcephalic.	Mother hard worked and nervous during gestation. Infantile paralysis and whooping-cough proximate causes.	8	3 brothers. 4 sisters, 1 dead.
34	M.	5th	Imbecile, first.	Microcephalic.	Infant sickly; did not walk until over two years of age.	10	7 brothers, twins dead, 2 others dead 1 sister. 1 child of uncertain sex died
35	M.	2d	Imbecile, middle.	Choreic, hemiplegic.	Very nervous babe, but condition attributed to a blow on head at 6 years of age.	3	1 brother, dead, defective. 1 sister, imbecile.
36	M.	1st	Imbecile, first.	Epileptic, microcephalic.	One of these congenital, microcephalic imbeciles.	8	5 brothers, 2 idiots, 3 stillborn. 2 sisters, dead defective.
37	M.	3d	Imbecile, middle.	Choreic.	Mother ascribes to shock during gestation; domestic grief.	5	2 brothers, 1 dead defective. 2 sisters.
38	F.	1st	Imbecile, first.	Hemiplegic.	Ascribed to ligation of carotid artery, for arrest of hemorrhage from abscess in neck, result of scarlet fever.	2	1 brother.
39	M.	4th	Imbecile, middle.	"Moral idiot."	Moth. suffered incredible hardships during gestation from an inebriate husband. Child did not walk until late, and both hands were paralyzed.	4	2 brothers, 1 dead. 1 sister, dead.
40	M.	1st	Imbecile, first.	Choreic, hemiplegic.	Premature birth because of fall. Babe very sickly; infantile paralysis.	4	2 brothers, 1 defective, one dead. 1 sister, defective.

No. 1.—Continued.

Age of parents at birth of the case.		Deceased parents.		Parental.	Grandparental.
F.	M.	F.	M.		
33	23	..	47	Mother died of phthisis; father not strong minded.	
25	23	..	..	Father inebriate; mother's family and herself consumptive.	Maternal grandfather died of phthisis.
39	33	..	..	Father insane.	Paternal grandfather died of apoplexy. Both maternal grandparents of phthisis.
37	25	+	+	Mother died of consumption.	Maternal grandmother died of cancer.
26	20	..	..	Father inebriate, and now insane; mother weak-minded. Father's family die of consumption.	Paternal grandparents died of consumption.
23	17	38	..	Father intemperate; died of consumption; mother weak-minded and hysterical.	Maternal grandmother weak-minded.
30	26	..	41	Parents full cousins; mother died of acute phthisis.	Paternal grandfather died at 47 of heart disease. Paternal grandmother died at 56 of asthma. Maternal grandfather died at 52 of dropsy.
26	23	..	..	Consumption and intemperance in father's family.	
19	18	..	..	Father inebriate; mother's sister has spasms.	Paternal grandfather & maternal grandfather inebriate; former not of sound mind.
30	31	..	..	Mother scrofulous, and brothers and sisters are either dead or dying of phthisis.	Maternal grandfather died of consumption. Maternal grandmother epileptic and weak-minded; cancer on this side.
29	23	+	+	Mother died young of consumption; had hysteria. Mother's sister epileptic.	History incomplete.
33	31	..	37	.....	History shows no hereditary taint whatever, excepting maternal grandmother dying at 39 of phthisis.
27	30	45	..	Father died of "apoplexy."	Maternal grandparent died of paralysis.
34	35	..	..	Father thick speech and hearing; mother eccentric; neither of sound mind.	Paternal grandfather inebriate phthisis on maternal side.
26	22	40	..	Father inebriate; died epileptic; mother not of full mind.	Phthisis on paternal side.
33	27	40	..	Father died of "dropsy;" mother's sister was epileptic and weak-minded.	Paternal grandfather died of phthisis. Maternal grandmother died of phthisis.
40	29	+	..	No hereditary taint known.	
40	35	41	36	Father violent inebriate; died intestinal hemorrhage; mother died of consumption.	Paternal grandfather inebriate.
22	21	32	31	Father died of acute phthisis; mother died of puerperal fever.	Paternal grandfather inebriate. Maternal grandfather and maternal grandmother died young of phthisis.

TABLE

No.	Sex.	Order of birth.	Grade.	Condition.	History of pregnancy, birth, and infancy.	No. of births.	Brothers and sisters.
41	M.	1st	Imbecile, first.	Paraplegic.	Had convulsions at 4 months, and did not walk until 4 years old. One of three remarkable cases of pseudo-muscular hypertrophy.	7	4 brothers, 2 idiotic, 2 stillborn. 2 sisters.
42	M.	2d	Imbecile, low.	.....	Sickly, frail infant giving early evidences of mental feebleness.	4	2 brothers, 1 dead consumptive. 1 sister, dead consumption.
43	M.	2d	Imbecile, first.	Epileptic.	Premature birth. Infantile convulsions and asphyxia.	7	3 brothers, 1 defective, 1 dead defective. 3 sisters, 1 dead imbecile, 1 dead.
44	F.	2d	Imbecile, low.	Epileptic.	Healthy infant; convulsions in second year from poisonous ingesta.	2	..... 1 sister.
45	M.	6th	Insane.	.....	.....	7	2 brothers. 4 sisters, 2 dead.
46	F.	2d	Idiot, excitable.	Mute, hemiplegic, choreic, epileptic, microcephalic.	Asphyxia at birth. Convulsions at 7 months.	4	2 brothers. 1 sister.
47	M.	1st	Imbecile, low.	Choreic, mute, hemiplegic.	Difficult, instrumental delivery; spasms and sickly childhood.	1	.....
48	F.	1st	Imbecile, low.	Choreic, mute, hemiplegic.	Mother abused, lily-fed, and over-worked during this gestation.	6	3 brothers, 1 dead. 2 sisters.
49	M.	3d	Idiot, apathetic.	Mute, microcephalic.	Born with mal-shaped head. Convulsions at 3 years; did not walk until 4.	8	2 brothers, 1 stillborn. 5 sisters.
50	M.	8th	Imbecile, middle.	Epileptic, paraplegic.	Strong babe until teething; Hutchinson teeth; and evidences of syphilitic taint.	9	4 brothers, 1 defective. 4 sisters, 1 defective.
51	M.	3d	Imbecile, middle.	Semi-mute.	Ascribed to cerebro-spinal meningitis when two years old.	4	1 brother, dead. 2 sisters, 1 defective.
52	M.	1st	Imbecile, middle.	.....	Uncommonly quiet, stupid babe, and as a little child abused by father.	6	2 brothers. 3 sisters, 1 dead.
53	F.	4th	Idiot, excitable.	Hydrocephalic.	Tedious labor. At three weeks child had severe pneumonic attack; scarlatina at 2, with destructive sequelae.	4	1 brother, dead. 2 sisters, 1 dead.
54	M.	1st	Imbecile, low.	.....	Very difficult labor, preceded by a gestation of great mental disturbance. Cranial bones defective in ossification. In all the early pregnancies there was intense alienation towards the husband.	8	3 brothers, 1 idiotic, 1 stillborn. 4 sisters, 2 defective dead, 1 defective.
55	M.	1st	Imbecile, low.	Mute, paraplegic	.....	4	..... 3 sisters.
56	F.	5th	Imbecile, low.	Hydrocephalic, choreic.	Very delicate babe. Suspected to have "bowel consumption"	6	1 brother, stillborn, 4 sisters, 3 consumptives, 1 of whom dead, 2 dead.
57	M.	4th	.....	.....	Pregnancy accompanied by grave anxiety. Difficult labor; feeble infancy.	6	2 brothers, 1 dead. 3 sisters, 1 dead.
58	F.	1st	Imbecile, first.	Hydrocephalic.	Illegitimate child of an imbecile mother.	1	.....
59	M.	2d	Idiot, apathetic.	Microcephalic, choreic, mute.	Very feeble infancy; brain fever at 9 months.	3	1 brother. 1 sister.
60	F.	4th	Imbecile, middle.	Epileptic.	From 2d to 4th year arrest of growth, and extremely delicate health.	7	3 brothers, 1 of them a miscarriage. 3 sisters, 2 dead; 2 of them twins.
61	F.	2d	Imbecile, low.	Mute.	Very delicate infancy, and backward development.	4	2 brothers, 1 defective. 1 sister.

No. 1.—Continued.

Age of parents at birth of the case.		Deceased parents.		Parental.	Grandparental.
F.	M.	F.	M.		
21	18	+	33	Both parents of extremely nervous temperament; mother deaf and scrofulous, not of strong mind, and died of cancer; father died of consumption.	
26	22	+	..	Parents first cousins, with a history of rheumatism and consumption in entire family.	
22	22	33	..	Father epileptic; brother half witted; mother eccentric, and epilepsy in her family.	Paternal grandfather inebriate. Paternal grandmother opium eater; neither of strong mind. Maternal grandparents died of consumption.
25	25	..	..	Father moderate drinker; consumptive diathesis; mother hysterical.	A great-aunt of father epileptic, and No. 44 is attributed to atavism, the paternal grandparents being first cousins.
58	38	70	..	Mother and father inebriate; mother excitable and weak-minded.	Inebriety on paternal, and insanity on maternal sides.
28	26	32	..	Consumption on maternal side.	
35	40	+	40	Both parents died of phthisis.	
21	21	..	..	Father inebriate.	"Heart disease" in both families.
29	25	40	..	Father scrofulous; died of typhoid dysentery.	Maternal grandparents first cousins, with scrofula and insanity in one branch.
42	41	..	..	Father inebriate; mother deaf, and of feeble understanding.	Paternal grandfather epileptic.
28	23	43	36	Father inebriate; died of consumption; mother weak-minded; died of consumption.	No information.
24	17	..	..	Father vicious and quarrelsome; tobacco in excess; mother very delicate.	No information.
29	27	..	..	Father consumptive, and very nervous.	Paternal grandfather had "tremendous sprees" in liquor. Paternal grandmother scrofulous.
27	22	..	..	Domestic misery, and alcoholism on both sides. Perhaps tendency to insanity.	Grandparents on both sides long-lived and healthy.
21	20	38	..	Father died of spinal disease; mother highly nervous, and very eccentric.	
32	28	..	31	Father thick speech and dull understanding; mother died of phthisis; sister had an idiotic child.	Insanity on maternal grandmother's side.
34	30	39	..	Father paralytic; died of erysipelas.	Paternal grandfather erysipelas, and entire family died of same.
..	..	..	..	Father inebriate; mother imbecile.	Paternal grandmother inebriate.
38	30	46	..	Father inebriate; died of brain disease; mother very deaf, below average intellect, and consumptive.	Grandparent long-lived.
28	27	..	40	Feeble-mindedness in father's family.	Father's ancestors unknown; mother's very long-lived.
..	..	..	36	Father inebriate; mother weak-minded and inebriate; died of phthisis.	Maternal grandfather intemperate. Maternal grandmother insane, and of consumptive family.

No.	Sex.	Order of birth.	Grade.	Condition.	History of pregnancy, birth, and infancy.	No. of births.	Brothers and sisters.
62	M.	2d	Imbecile, low.	.....	A very strong infant, but developed mother's neurosis very early.	6	3 miscarriages, 1 child dead, 1 brother defective.
63	M.	8th	Idiot, excitable.	Microcephalic, mute.	Mother under painful shock in early pregnancy. Infant's osseous system very defective; could not walk until 5 years.	12	6 brothers, 1 idiotic, 2 died of phthisis. 5 sisters, 2 died of phthisis, 1 died in infancy.
64	M.	1st	Imbecile, low.	Hemiplegic.	Convulsions in infancy.	3	2 brothers.
65	M.	3d	Imbecile, middle.	Choreic.	Did not walk until 5 years old.	3	1 brother. 1 sister.
66	F.	3d	Imbecile, low.	Epileptic, hemiplegic, microcephalic.	Was a hearty babe; attributed to fall from carriage when 2 years old.	3	1 brother, consumptive. 1 sister.
67	M.	2d	Imbecile, middle.	.....	Pregnancy associated with great debility. Difficult instrumental delivery, and enfeebled infancy.	4	2 brothers, 1 imbecile died. 1 sister.
68	F.	6th	Imbecile, first.	.....	Infant sickly for two years.	8	2 brothers. 5 sisters.
69	M.	4th	Insane.	Choreic.	No history given.	5	2 brothers, 1 insane, 1 defective. 2 sisters, 1 insane.
70	M.	7th	Idiot, apathetic.	Mute, microcephalic.	Mother during pregnancy shocked by attention on child dying in convulsions. Infancy very sickly.	11	4 brothers, 1 died with epilepsy. 6 sisters, 1 still-born.
71	F.	1st	Imbecile, middle.	.....	Gestation accompanied with intense anxiety and sorrow.	2	1 brother, dead.
72	M.	1st	Imbecile, first.	.....	Domestic anxiety during pregnancy. Difficult labor, and puny infancy. All the births of this wedlock are premature.	3	..... 2 sisters, both dead, 1 with phthisis.
73	M.	3d	Idiot, excitable.	Mute, microcephalic, hemiplegic.	Sickly infancy; partially blind.	3	Oldest brother died of consumption, next brother consumptive.
74	M.	3d	Imbecile, low.	Hemiplegic.	Illegitimate. Born of a prostitute, and evidence of congenital syphilis.	3	First two brothers defective.
75	M.	1st	Idiot, apathetic.	Mute, microcephalic.	Very feeble infancy.	6	2 brothers, 1 imbecile, 3 sisters, 1 dead.
76	F.	5th	Idiot, excitable.	Epileptic, hydrocephalic.	Infancy and childhood marked with signs of syphilitic taint. A "moral idiot."	7	6 dead, 4 of them miscarriages.
77	M.	2d	Imbecile, middle.	Mute, choreic.	Choreic infant at 3 months.	8	5 dead, 2 of them miscarriages. 2 sisters living.
78	M.	3d	Imbecile, low.	Microcephalic.	Attributed by mother to fright during gestation. Infant's body covered at birth with a "scrofulous eruption."	4	2 dead. 1 sister consumptive.
79	F.	6th	Imbecile, middle.	Microcephalic.	Very delicate baby.	7	3 brothers, 1 of them died of epilepsy. 3 sisters, 1 defective, and 1 died of epilepsy.
80	M.	9th	Imbecile, first.	Epileptic.	Convulsions three days after birth, but otherwise strong child.	11	8 brothers, 4 of them died of phthisis, 1 is idiotic, and 1 died in infancy. 2 sisters, 1 died of phthisis.

No. 1.—Continued.

Age of parents at birth of the case.		Deceased parents.		Parental.	Grandparental.
F.	M.	F.	M.		
27	..	..	..	Mother epileptic; her sister a deaf mute; her family is consumptive.	
43	31	..	44	Mother died of cancer of womb; consumption on paternal side.	Paternal grandfather died of consumption. Maternal grandmother died of heart disease.
42	25	..	..	Father dissipated, syphilitic; mother is feeble minded.	
33	31	40.	..	Father became dissipated and syphilitic; died of general paralysis; mother consumptive, etc.	Paternal grandfather died at 60 erysipelas. Paternal grandmother died of tuberculosis. Maternal grandfather died of heart disease at 65. Maternal grandmother died at 60, fever.
..	22	+	+	Mother was a twin sister of mother of No. 19.	No. 66 is a case of hereditary imbecility traceable through maternal ancestry. Mother consumptive epileptic; 7 sisters and 3 brothers died of consump. Maternal grandfather inebriate
25	24	..	..	Father weak-minded; excessive in his use of tobacco.	Paternal grandfather always "hard of hearing."
36	32	47	..	Father died of consumption; intemperate.	
50	40	+	..	Parents very eccentric, but highly cultivated.	Insanity in both families.
38	35	..	..	No history of constitutional taint given of either family.	
30	20	31	27	Mother died of consumption.	Maternal grandfather died of consumption.
23	18	..	..	Father insane temperament; abandoned his family.	Grandparents long-lived and healthy.
45	25	45	..	Father died of phthisis; mother's brother is feeble minded; mother is nervous and consumptive.	Paternal grandfather and grandmother died of phthisis.
..	32	..	+	Mother an abandoned woman; her first children by a weak-minded husband are both imbecile; mother died of syphilis.	
22	20	..	..	Father intemperate.	Paternal grandfather died of phthisis. Both maternal grandparents died of phthisis.
..	..	30	..	Father insane, epileptic (syphilitic); mother hysteric, weak-minded. Second marriage is to a paralytic.	Paternal side very healthy, long-lived. Maternal grandmother died at 30, phthisis.
..	19	45	..	Father died of cancer of stomach; mother of a large family noted for its sterility.	Cancer in paternal line. Maternal grandfather died at 52, phthisis.
22	34	35	..	Father inebriate, died of phthisis and excess. Mother by first husband had 3 children, all dying in infancy.	Paternal line very vigorous.
..	..	49	41	Father died of consumption; mother epileptic, dipsomaniac.	Paternal grandmother died of phthisis. Scrofula in maternal family.
40	37	57	..	Both parents subject to migraine, and below ordinary standard of intellect; father died of phthisis.	Paternal grandfather died of phthisis.

TABLE

No.	Sex.	Order of birth.	Grade.	Condition.	History of pregnancy, birth, and infancy.	No. of births.	Brothers and sisters.
81	M.	4th	Imbecile, middle.	Choreic.	Attributed to laudanum given in infancy.	7	4 dead.
82	M.	3d	Imbecile, first.	Hydrocephalic.	Attribut'd to accoucheur's rough handling. Unable to hold his head up until a year old.	4	2 <i>brothers</i> . 1 <i>sister</i> .
83	F.	7th	Imbecile, middle.	Choreic, hydrocephalic.	.....	10	6 <i>brothers</i> , 4 of them dead 3 <i>sisters</i> .
84	M.	2d	Imbecile, middle.	Choreic, dwarf.	Ascribed to mental disquietude during gestation. Infant had marasmus until 2 years old.	4	2 <i>brothers</i> . 1 <i>sister</i> , dead.
85	F.	5th	Idiot, excitable.	Microcephalic, choreic.	Conceived when father was suffering from temporary amaurosis. Premature birth of infant weighing 1½ lbs.	8	4 <i>brothers</i> , 1 consumptive. 3 <i>sisters</i> , 1 dead.
86	M.	1st	Imbecile, middle.	Microcephalic.	Protracted instrumental delivery.	2	..... 1 <i>sister</i> , consumptive.
87	M.	4th	Imbecile, first.	.....	Mother despondent from poverty and anxiety during her whole fecund life.	7	2 <i>brothers</i> , defective 3 <i>sisters</i> , 2 of wh'm were imbeciles, 1 (twin to the case) died, 1 defective.
88	M.	9th	Imbecile, low.	Cretin, choreic.	Weakly, ill-shaped infant.	11	2 <i>brothers</i> , 1 dead. 8 <i>sisters</i> , 2 dead, 1 defective.
89	M.	1st	Imbecile, middle.	.....	Illegitimate child of feeble minded parentage.	1	.....
90	F.	1st	Imbecile, middle.	Hydrocephalic, choreic.	Unfortunate off-spring of a wretched union.	1	Mother's 2d marriage; has 1 miscarriage; 1 <i>brother</i> consumptive.
91	M.	1st	Imbecile, low.	Epileptic.	Strong infant until 18 months, when he had convulsions, which continued until they became epileptic.	1	.....
92	M.	1st	Imbecile, low.	Microcephalic, choreic, semi-mute, hemiplegic.	Condition referred to injury at birth, which was difficult.	4	1 <i>brother</i> . 2 <i>sisters</i> , 1 defective.
93	M.	2d	Imbecile, middle.	.....	Mother ill from a fright, and sick during most of gestation. Infant weighed but 3 lbs., puny and sickly.	4	1 <i>brother</i> . 2 <i>sisters</i> , 1 defective.
94	F.	3d	Imbecile, middle.	.....	Moth. over-worked and abused. Infant had supernumerary fingers and toes, as had all the other children. None talk plainly.	12	3 miscarriages, 1 of them twins; 1 defective sister, 1 defective, and 1 imbecile brother.
95	M.	2d	Imbecile, first.	Epileptic.	Ascribed to a fall in his ninth year. No traumatism visible.	2	1 <i>sister</i> .
96	F.	5th	Imbecile, low.	Choreic, microcephalic.	Father constantly in liquor, made mother more than usually anxious. Spasms from infancy till 3 years old.	9	5 <i>brothers</i> , 2 defective, 2 died of phthisis. 3 <i>sisters</i> , 2 of whom defective.
97	F.	3d	Idiot, apathetic.	Cretin, choreic, microcephalic.	Said to be occasioned by intensity of mother's mind fixed on Barnum's "What is it?" visiting it during pregnancy.	4	3 <i>brothers</i> , 1 died of consumption.
98	F.	2d	Idiot, excitable.	Epileptic, mute.	Infant had spasms at two months old.	4	2 <i>brothers</i> . 1 <i>sister</i> , dead.
99	M.	3d	Imbecile, middle.	Hydrocephalic, choreic.	.....	7	2 <i>brothers</i> , 1 imbecile, 1 imbecile dead. 4 <i>sisters</i> , 1 dead.
100	F.	3d	Imbecile, middle.	Epileptic, hydrocephalic.	Mother greatly prostrated during pregnancy, and exposed to hot weather.	9	5 <i>brothers</i> , 1 of twins dead, 1 dead. 3 <i>sisters</i> , 1 of twins dead.

No. 1.—Continued.

Age of parents at birth of the case.		Deceased parents.		Parental.	Grandparental.
F.	M.	F.	M.		
30	28	..	..	Mother subject to attacks of migraine, and very nervous; father scrofulous.	Maternal grandfather inebriate. Maternal grandmother died of paralysis.
30	27	..	29	Father nervous, unstable man; mother died of rheumatism.	
..	..	48	45	Father violent man, died of paralysis; mother died of erysipelas.	
28	5	..	..	Father unstable, very nervous; small of stature.	Grandparents healthy and long-lived.
42	33	..	+	Mother died of paralysis; all her brothers are drunkards. Parent subject to severe neuralgic blindness.	Highly respectable and long-lived families.
41	29	39	39	Mother small, delicate, neuralgic woman, always sick; died of phthisis. On father's side blindness, deafness, and paralysis.	Paternal grandmother died at 40 of phthisis.
30	35	39	..	Father visionary monomaniac, epileptic and inebriate, using opium, and dying of phthisis; mother very capable woman.	Hysteria on paternal side; erysipelas and consumption on mother's.
40	38	..	+	Parents very vigorous and intelligent.	Paternal grandfather died of phthisis at 42. Maternal grandfather suicide at 30; insanity in this line.
28	19	..	..	Father inebriate and weak minded; mother weak minded.	No history.
33	20	..	..	Father a man of ability and education, but of violence of temper bordering on insanity.	No history.
24	20	28	..	Mother simple-minded and consumptive; father died of consumption.	Paternal grandparent died of phthisis, and 5 children consumption. Maternal grandfather insane and intemperate.
33	31	49	..	Father choreic in childhood; died of heart disease.	Paternal grandmother died of congestion of brain; consumption in both lines; paternal grandparents second cousins.
31	25	52	..	Parents second cousins. Father died of phthisis; mother suffers from migraine.	Paternal grandfather died of heart disease. Maternal grandmother died of phthisis.
34	22	42	..	Father epileptic and inebriate; mother healthy, intelligent woman.	Paternal grandfather epileptic. Paternal grandmother "died in fits."
36	30	..	44	Mother died of phthisis; otherwise families are long-lived and healthy.	
36	27	..	..	Father bestial character; his brother insane. Mother became insane, is now in hospital; her brother and uncle are insane.	Maternal grandmother died of paralysis.
37	33	..	..	Parents not physically strong; father consumptive.	Erysipelas in grandparental families.
34	23	..	34	Father small stature, deaf, and poor understanding; mother died of scarlatina.	Paternal grandfather died of hemoptysis. Others live to great age.
32	28	..	..	Parents second cousins. Three of mother's sisters have feeble-minded children.	Both grandfathers very intemperate.
39	38	..	..	Both parents have been drinkers, but no facts bearing on case.	Lived to great age; very healthy.

TABLE NO. 2.—*Showing order of Birth and condition of Children in the 100 Families comprised in the investigation.*

	Imbecile.	Defective.	Normal.	Miscarriages.	Total.
First pregnancy	36	16	45	3	100
Second “	22	17	51	5	95
Third “	21	16	50	1	88
Fourth “	8	12	49	6	75
Fifth “	13	5	31	6	55
Sixth “	8	5	30	5	48
Seventh “	5	2	29	4	40
Eighth “	5	3	16	2	26
Ninth “	3	4	11	0	18
Tenth “	0	2	6	2	10
Eleventh “	1	0	4	1	6
Twelfth “	0	0	2	2	4
Thirteenth “	0	0	0	1	1
Total	122	82	324	38	566

REMARK.—The children credited to the column “Normal,” are so represented by the informants, and it is probable that this judgment is in some cases biased.

TABLE NO. 3.—*Showing Sex of the 566 Children.*

	Males.	Females.	Total.
Imbecile	86	36	122
Defective	49	33	82
Normal	161	163	324
Miscarriages, ¹ etc.	13	7	20
Total	309	239	548

¹ In 18 cases the sex of miscarriages and still-births is not stated, and hence these are not included in this table.

TABLE No. 4.

Aggregates of Orphanage, Grades, Conditions, and Parental and Grandparental Antecedents of 100 Idiomatic and Feeble Minded Children.

EXPLANATORY.

	ORPHANS.							CONDITION OF CHILDREN.							STOCK.										
	ORPHANS.	HALF-ORPHANS.	NOT ORPHANS.	IDIOTS (EXCITABLE).	IDIOTS (APATHETIC).	IMBECILES—LOW GRADE.	IMBECILES—MIDDLE GRADE.	IMBECILES—FIRST GRADE.	INSANE.	EPILEPTIC.	PARETIC.	CHOREIC.	{ MICROCEPHALIC. DEMI-MICROCEPHALIC.	HYDROCEPHALIC.	MUTE.	CONSUMPTIVE.	PARALYZED.	EPILEPTIC.	INSANE.	WEAK-MINDED.	NERVOUSLY DISORDERED.	INTEMPERATE.	SYPHILITIC.	CONSANGUINEOUS.	
ORPHANS	13	..	..	0	0	1	8	4	0	3	1	1	4	0	1	10	2	1	0	1	5	5	0	0	
HALF-ORPHANS.....	..	47	..	6	4	12	11	10	4	11	10	13	13	6	13	34	2	9	6	10	18	14	2	5	
NOT ORPHANS .....	..	..	40	2	4	12	15	7	0	7	3	15	7	9	6	11	2	5	4	6	11	19	0	2	
IDIOTS (EXCITABLE).....	0	6	2	8	..	..	..	..	..	3	2	3	4	3	6	5	1	1	1	0	2	1	0	1	
IDIOTS (APATHETIC).....	0	4	4	..	8	..	..	..	..	0	2	3	5	0	7	5	1	1	0	0	1	3	0	1	
IMBECILES—LOW GRADE.....	1	12	12	..	..	25	..	..	..	5	6	11	8	4	5	15	1	3	4	6	9	11	1	2	
IMBECILES—MIDDLE GRADE.....	8	11	15	..	..	..	34	..	..	7	2	7	4	4	2	19	2	8	2	3	11	13	1	2	
IMBECILES—FIRST GRADE.....	4	10	7	..	..	..	..	21	..	6	2	3	3	3	0	8	1	1	3	6	8	8	0	1	
INSANE.....	0	4	0	..	..	..	..	..	4	0	0	2	0	1	0	3	0	1	0	2	3	2	0	0	
CONDITION OF CHILDREN.	EPILEPTIC.....	3	11	7	3	0	5	7	6	0	21	1	1	6	4	2	9	2	5	5	2	6	4	0	1
	PARETIC.....	1	10	3	2	2	6	2	2	0	1	14	6	5	0	7	8	1	2	0	2	5	4	1	2
	CHOREIC.....	1	13	15	3	3	11	7	3	2	1	6	29	10	4	9	17	3	5	3	3	13	11	1	3
	{ MICROCEPHALIC DEMI-MICROCEPHALIC }	4	13	7	4	5	8	4	3	0	6	5	10	24	..	8	15	4	4	1	3	6	10	0	2
	HYDROCEPHALIC.....	0	6	9	3	0	4	4	3	1	4	0	4	..	15	3	7	1	2	2	2	5	5	0	1
	MUTE.....	1	13	6	6	7	5	2	0	0	2	7	9	8	3	20	11	0	1	1	2	6	5	0	3
STOCK.	CONSUMPTIVE.....	10	34	11	5	5	15	19	8	3	9	8	17	15	7	11	56	5	12	7	13	21	20	1	5
	PARALYZED.....	2	2	2	1	1	1	2	1	0	2	1	3	4	1	0	5	6	1	1	2	3	1	0	1
	EPILEPTIC.....	1	9	5	1	1	3	8	1	1	5	2	5	4	2	1	12	1	16	4	4	5	9	0	0
	INSANE.....	0	6	4	1	0	4	2	3	0	5	0	3	1	2	1	7	1	4	10	2	5	5	0	0
	WEAK-MINDED.....	1	10	6	0	0	6	3	6	2	2	2	3	3	2	2	13	2	4	2	18	7	13	0	0
	NERVOUSLY DISORDERED	5	18	11	2	1	9	11	8	3	6	5	13	6	5	6	22	3	5	5	6	35	14	0	2
	INTEMPERATE.....	5	14	19	1	3	11	13	8	2	4	4	11	10	5	5	20	1	9	5	13	14	38	0	1
	SYPHILITIC.....	0	2	0	0	0	1	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	2	0
	CONSANGUINEOUS.....	0	5	2	1	1	2	2	1	0	2	2	3	2	1	3	5	1	0	0	0	2	1	0	7

This table is intended to show the accessory conditions and tendencies of a certain given group of defective individuals represented in these tables, and of the stock from which they descend.

If, for instance, the group "Low Grade Imbeciles" be the one given, we find the total at the intersection of the vertical and horizontal columns with the same headings, to wit, 25.

Following the vertical or horizontal columns to both sides, we find that of 25 Imbeciles (Low Grade), 1 is an orphan, 12 are half-orphans, and 12 not orphans.

We further find that 5 are *Epileptics* also.
 6 " *Paretic* "
 11 " *Choreic* "
 8 " *Microcephalic* "
 4 " *Hydrocephalic* "
 5 " *Mute* "

Pushing forward in the column we find that in the families of these 25 children, including parental and grandparental generations, there was

Consumption in 15 families.
 Paralysis " 1 family.
 Epilepsy " 3 families.
 Insanity " 4 "
 Weak-mindedness " 6 "
 Nervous Disorders " 9 "
 Intemperance " 11 "
 Syphilis " 1 family.
 Consanguinity " 2 families.

Within the columns of the table under "Stock" we are able to trace variations in the hereditary tendencies, for example—

The table gives us 38 as the number of cases in which intemperance is given as an accessory or immediate causation. By following the column we find the concurrent causes, the conditions and the orphanage of the group of defective children being the progeny of these 38 families. It is clear that no individual case can be singly traced out in this table.

