On Hereditary Insanity. By HUGH GRAINGER STEWART, M.D. Edin., Medical Assistant in the Crichton Royal Institution, Dumfries.

THE hereditary transmission of disease, or of a tendency to it, has of late attracted more attention than it formerly did, and medical literature has been enriched by many able and learned disquisitions on the subject. Its importance seems to be generally appreciated, to a certain extent, but not to so great an extent, as a more perfect knowledge of its operation, and the vastness of its influence, would justify. From Burton's 'Anatomy of Melancholy' may be quoted many passages by ancient writers, showing a lively appreciation of the fact of hereditary transmission, especially of disease. Fernelius[1] says, "Such as the temperature of the father is, such is the son's, and, look, what disease the father had when he begot him, his son will have after him, and is as well the inheritor of his infirmities as of his lands." "And where the complexion and constitution of the father is corrupt, then," saith Roger Bacon, "the complexion and constitution of the son must needs be corrupt, and so the corruption is derived from the father to the son." Burton also quotes passages from Hippocrates, Buxtorfius, Lemnius, Paracelsus, Crato, Bruno Seidelius, Daniel Sennertus, Forestus, Rodericus a Fonseca, Lodovicus Mercatus, and many others, referring to hereditary transmission, or the transmission of melancholy. The last mentioned wrote a book on the subject, 'De Morbis Hereditariis,'[2] and therein first notices what is now called atavism. "It skips, in some families, the father and goes to the son, or takes every other, and sometimes every third, in a lineal descent, and doth not always produce the same, but some like, and a symbolising disease." This last remark is of importance, as anticipating a fundamental principle in modern investigations into the subject.[3] Burton himself highly estimates the importance and power of hereditary transmission, when he says,[4] "These secondary causes, hence derived, are commonly so powerful that (as Wolphius holds) they do often alter the primary causes and decrees of the heavens." This most learned and far-seeing author mentions facts, and hints at conclusions which are only now being understood and arrived at, and shows that an appreciation of the truth of hereditary transmission had formed the basis of laws forbidding the marriage between persons in any whit allied, and of those stern and

[1] Burton, 'Anatomy of Melancholy,' vol. i, p. 89.
[2] Mentioned by Burton, by J. H. Steinau, in his 'Essay on Hereditary Diseases,' p. 2, and by Whitehead on 'Hereditary Disease,' p. 15.
[3] Whitehead, id. lib., p. 15.
[4] Burton, vol. i, p. 89.

implacable decrees, which, among certain Indian tribes, and even in Scotland, at an early period, necessitated the destruction of those that suffered from madness, gout, falling sickness, or any such dangerous diseases.[1]

More careful and statistical investigations have, in modern times, been undertaken, for the elucidation of the subject of hereditary tendency, especially in reference to insanity, by Esquirol,[2] Guislain,[3] Thurnam,[4] Baillarger,[5] Brigham,[6] Hood,[7] and others; whilst able elucidations, and philosophic disquisitions, have been written by Whitehead,[8] Leubuscher,[9] Steinau,[10] Maudsley,[11] Moreau,[12] &c.

In all treatises on insanity a few pages are devoted to the consideration of the hereditary tendency; for the most part, however, nothing new is stated. The remarks of Crichton,[13] Burrows,[14] Combe,[15] Morrison,[16] Marcé,[17] Moreau,[18] Tuke,[19] and Morel,[20] are well worthy of careful perusal.

The subject has thus been well investigated, but there still remain certain points on which our information is imperfect, and some of which I hope to elucidate in this paper. Considering that the records of the cases in the Crichton Royal Institution afforded a good field for such an investigation, I have gone carefully over them, and tabulated the results. The statistics thus obtained embrace the cases admitted since the opening of the Institution, in 1839, to the end of last year, 1863, a period of twenty-four years, and show, in mass, the general history of 901 cases of insanity. The records of the cases were made by Dr. Browne, from 1839 to 1857; by Dr. Dickson, from 1857 to 1859; and by myself, from 1859 to 1863. These records are generally elaborated from answers given to certain queries forwarded to the friends, and filled up by the medical adviser of the patient applying for admission. The query respecting hereditary

[1] Burton, pp. 92, 93. Burton's authority, that such laws existed in Scotland, is Boethius, a somewhat credulous historian.
[2] 'Des Maladies Mentales.'
[3] 'L'Alienation Mentale.'
[4] 'Statistics of Insanity.'
[5] Quoted in Sir Alex. Morrison's 'Lectures on Insanity.'
[6] Quoted in Tuke and Bucknill, 'Psychological Medicine.'
[7] Hood, 'Statistics of Insanity,' 1862.
[8] Whitehead, on 'Hereditary Disease.'
[9] 'Journal of Psychological Medicine,' 1848.
[10] 'Essay on Hereditary Diseases,' 1848.
[11] "On Hereditary Tendency," in the 'Journal of Mental Science,' for January, 1863, and January, 1864.
[12] Moreau (de Tours), 'La Psychologie Morbide.'
[13] Crichton, on 'Mental Derangement.'
[14] Burrow's 'Commentaries on Insanity.'
[15] Combe, on 'Mental Derangement.'
[16] Op. cit.
[17] Marcé, 'Des Maladies Mentales.'
[18] Moreau, op. cit.
[19] Tuke and Bucknill, op. cit.
[20] Morel, 'Des Maladies Mentales.'

tendency is the following: "Is the patient, or his relatives, subject to any hereditary, nervous, or periodical disease, and what? or have they manifested any peculiarity, eccentricity, or prominent propensity, or tendency to crime?" From the answer given to this question, and from any other sources of information he may possess, the reporter makes up a statement on this point. During the first ten years of its existence, pauper as well as private patients were admitted into the Crichton Institution, but, since the opening of the Southern Counties' Asylum, in 1849, private patients only have been received, so that the statistics are made up from cases occurring in the lower, as well as in the middle and upper classes of society, although those belonging to the two latter predominate. In recording the cases, no greater pains were taken in ascertaining the fact of hereditary transmission, than were employed in ascertaining any other fact in the history of the case.

In considering, in detail, the following questions, I shall endeavour to place at the same time, before the reader, a general view of the results obtained by other investigators, in such a form that they may be easily compared with those which I bring forward.

I shall consider the following questions:

I. *The proportion of the insane having an hereditary predisposition to the disease.*
II. *The proportion in the hereditarily predisposed, having their parents, or collateral relations, affected.*
III. *The influence of sex in transmitting insanity.*
IV. *The influence of sex in receiving hereditary insanity.*
V. *The frequency of the transmission of the different forms of insanity in the hereditarily predisposed.*
VI. *The age on first attack in hereditary cases.*
VII. *The number of previous attacks at the time of admission.*
VIII. *The domestic condition.*
IX. *The proportion of recoveries and deaths in hereditary and non-hereditary cases.*
X. *The duration of life in hereditary insanity.*

1.—*The proportion of the insane having an hereditary predisposition to the disease.*

Authorities vary very much in their computations of the frequency of hereditary transmission; and this variation may be accounted for in many ways. Among the poor, little is known of ancestry. Esquirol says that the women at Salpêtrière are frequently ignorant of the names of their parents; among the rich, on the contrary, every information may be obtained, but, not unfrequently, it is entirely withheld, or only partially imparted. Different views are held as to what constitutes sufficient evidence of hereditary trans-

mission; some authors call only those cases hereditary, in which mental disease has been known to exist in the direct line; "but it is important to remark," says Guislain,[1] "that the transmission is not always direct; that the father of an insane person may not have been affected, while the grandfather, or aunt, or uncle, or cousin, may have presented symptoms of this affection." In asylums where acute cases only are received, it is easily to be understood that hereditary tendency does not reach a figure so elevated; probably such cases are more frequently caused by other conditions than insanity being present in their forefathers; on the contrary, in an asylum where epileptics, idiots, imbeciles, and incurables are received, the hereditary predisposition appears in a much higher proportion. When mental disease appears in an individual, some authors recognise it as hereditary if the parents have suffered from any nervous disease; while others hold, that unless the parents have been actually insane (some even demanding that the insanity be of the same form), there is no evidence of hereditary transmission. When so many difficulties are to be overcome in getting at the truth, and when so much variety of opinion exists as to what constitutes hereditary predisposition, it is not wonderful that the following table should show such an amount of discrepancy.

TABLE I.

Showing the number of cases of Hereditary Insanity found by various authors, and the per-centage in the whole number of cases under observation.

Authors' Names.	No. of Cases.	No. of Hereditary Cases.	Per-centage.
[2]Esquirol			
In Salpêtrière	789	105	13·30
Private House	431	150	34·80
Charenton	1075	337	31·34
[3]Guislain	224	56	30·00
[4]Another computation	322	19	5·96
[3]Holst	467	323	69·00
[3]Jessen	522	360	65·00
[3]Parchappe	—	—	15·00
[3]Aubanel and Thore	549	24	4·37
[3]Michea	—	—	50·0 to 75·0
[3]Damerow	773	187	24·29
[3]Webster	—	—	32·00
[3]Brigham	1181	315	26·67
[5]Thurnam	469	153	32·6
Including collateral	469	224	47·7
[6]Hayner	192	23	11·97

[1] Guislain, quoted by Morel, op. cit., p. 115.
[2] Esquirol, op. cit., vol. i, pp. 62—64, and vol. ii, p. 682.
[3] Quoted by Tuke and Bucknill, op. cit., pp. 241-242.
[4] Guislain, 'Traité sur les Phrenopathies,' pp. 5-6.
[5] Guislain, 'l'Alienation Mentale,' vol. i, p. 154.
[6] Thurnam's 'Tables and Statistics of the Retreat,' p. 77.

Authors' Names.	No. of Cases.	No. of Hereditary Cases.	Per-centage.
[1]Burrows	—	—	85·71
[2]Noble	—	—	40·00
[3]Hood	3668	361	9·59
[4]Morel	—	—	20·0
[5]Marcé	56	24	42·85
Another computation . .	—	—	90·0
[6]Howe	420	355	84·52
[7]Moreau, de Tours . . .	—	—	90·0
[8]Ellis	1380	214	15·36

The results obtained in the foregoing table are interesting, as showing the marked rise in the per-centage of hereditary cases, when good opportunities are afforded of obtaining an accurate history of the patients; and the reverse, when their large numbers make a perfect examination difficult or impossible. Thus, Esquirol, while he discovers only 13·30 per cent. in Salpêtrière, finds 34·80 per cent. in his own establishment; Dr. Hood, in Bethlem, finds 9·59 per cent., while Thurnam, at the Retreat, finds 47·0 per cent. among his cases generally, and 51·0 per cent. among those occurring in the Society of Friends; while MM. Aubanel and Thore, at Bicêtre, found only 4·37 per cent., Dr. Burrows declared, as the result of his experience in private practice, that 85·0 per cent. of insane cases were hereditary. It may thus fairly be inferred, that the more perfect our information concerning the patients, the higher, up to a certain point, will be the per-centage of hereditary cases.

The high estimates of the frequency of hereditary transmission, made by recent French writers, are interesting and important. M. Moreau (de Tours)[9] says, "as we understand it, and as we believe it should be understood, hereditary predisposition is the source of nine tenths, perhaps, of mental maladies." M. Trelat observes, that we now find this tendency existing in a great number of cases, where former observers had not thought of looking for it; and Moreau gives us an idea of the indications that he regards as showing a tendency to nervous disease and insanity.[10] These are to be found in simple diseases of the nerves, such as convulsive movements of the eyelids, of the lips, of the different muscles of the face, grimaces, jerks of the head and shoulders, trunk, or extremities, stammering, certain defects in the pronunciation, &c. In all these, Moreau detects a tendency to nervous disease and to insanity

[1] Burrows, op. cit., p. 104.
[2] Noble, 'Elements of Psychological Medicine,' p. 225.
[3] Hood, 'Statistics of Insanity,' pp. 53, et seq.
[4] Morel, op. cit., p. 114.
[5] Marcé, op. cit., p. 109.
[6] Howe, 'On Idiocy,' p. 57.
[7] Moreau, op. cit., p. 116.
[8] Ellis, on 'Insanity,' p. 42.
[9] Moreau, op. cit., p. 116.
[10] Ibid., p. 150.

that may be transmitted.[1] M. Renaudin observes, that hereditary predisposition plays a part in the evolution of mental alienation, which is better appreciated to-day, and which, perhaps, is more important than it has been in other times. It is not at the first step that mental alienation ordinarily becomes the result, and two or three generations may pass, having proteoform modifications of nervous disease, before arriving at the final result—insanity. Taking into their consideration such a vast field of morbid nervous manifestation, it is not to be wondered that M. Moreau and others think that there are infinitely few cases of insanity in which there may not be traced hereditary predisposition, as they understand it.

In ascertaining the fact of hereditary predisposition, it is necessary to take into account cases of insanity occurring in collateral branches, as well as in the direct line of the family. It is obvious that eccentricity, mental peculiarities, and strong hereditary predisposition to mental disease, not amounting to insanity, may exist in many members of a family, although the father and mother have never been insane, the disease may have appeared in the uncle, or aunt, or even cousin, and in that way may its hereditary origin be discovered. In proportion, however, as this relative, so affected, is removed, so are the chances of fallacy increased. In a group of families, whose history is well known, and in which a tendency to hereditary insanity exists, it is not uncommon to see, here and there, a member afflicted with mental disease, traceable to some progenitor who had originated the tendency, the occurrence of which case would be inadequately accounted for, were we ignorant of the hereditary taint. In the same manner in the mass of cases that come before us, of whose ancestry we know little or nothing, we are forced to examine carefully collateral branches, and see if there we have no trace of the disease, which may, as in the other case, have the same origin. In such circumstances the probability of the hereditary origin of the disease is greatly increased, should more than one near relative have suffered from the malady.

In examining the condition, as to hereditary transmission, of the cases admitted into the Crichton Institution, I carefully ascertained whether there existed, or had existed in the direct line, or in collateral branches of the patients' family, insanity or eccentricity, and, if so, what relative had been affected. When a cousin in the *first* degree, or any nearer relative had suffered from such disease, the case was placed in the first, or hereditary class. In the *second* class were placed those whose relatives had suffered from some hereditary disease, not insanity, or in whose parents there was found some disease, or condition, which had apparently produced the insanity in their offspring. The *third* class comprises the cases in whose families, it was stated, no hereditary disease of any kind existed;

[1] Moreau, op. cit., p. 155.

and in the *fourth* class the condition, as to hereditary tendency, was unknown.

The following table shows the numbers and per-centage, or the total number of cases, in each class, distinguished on the principles above enunciated.

TABLE II.

Hereditary Insanity, or Eccentricity.	Hereditary Diseases, not Insanity.	No Hereditary Disease.	Hereditary condition unknown.
447 49·61 per cent.	49 5·43 per cent.	245 27·19 per cent.	160 17·75 per cent.

In 181 of the cases, only one relative of the patient was known to be insane, whilst in 266 cases, more than one relative had been affected.

It will be observed that these results approach very nearly those obtained by Thurnam, at the Retreat, with which they may be fairly compared, when he takes into consideration the insanity of collateral relatives. The per-centage falls far below the estimates of the later French, and some English authors, owing to the wider view they hold of what constitutes hereditary predisposition.

II.—*The numbers of the hereditarily predisposed, whose parents, or collateral relatives, were affected.*

So far as I know, there are no statistics published having reference to this point; as, however, it is an important one, I append the following classification of the hereditary cases. They are divided into five classes, according to the propinquity of the nearest relative known to be, or to have been, insane.

The *first* class contains those cases in which mental disease had appeared in the direct line—whose parents, or other ancestors, had been insane. In the *second* are those whose brothers or sisters had been insane. In the *third*, those having uncles or aunts so affected. In the *fourth*, those with cousins insane; and in the *fifth*, those whose near relatives—relationship being unknown—had been insane.

TABLE III.

	Male.	Female.	Total.
Parents or ancestors insane	127	88	215
Brothers or sisters insane	79	64	143
Uncles or aunts insane	18	16	34
Cousins insane	10	8	18
Relatives, relationship unknown, insane	19	18	37
Total	253	194	447

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III.—*The influence of sex in transmitting insanity.*

When both parents have been insane, it is concluded that there is small chance of escape for the offspring; but, even in such a case, the disease may only appear in some of the children, while the rest may be exempt, at all events, from an actual outburst of the malady.

Esquirol[1] first observed that insanity is oftener transmitted by the mother than by the father, and that the former may also, during her pregnancy and lactation, communicate disease to her offspring. The observations of Thurnam,[2] Brigham,[3] and Baillarger,[4] have confirmed these statements. In the following table the statistics of the two former are shown. I am unable to give Baillarger's results in a similar form.

TABLE IV.

Thurnam.		Brigham.	
Paternal influence.	Maternal influence.	Paternal influence.	Maternal influence.
39	40	79	91
Per-centage in all cases under observation.		Per-centage in all cases under observation.	
8·3	8·5	6·7	7·7

The next table shows these influences as observed in the cases in the Crichton Institution.

TABLE V.

CRICHTON CASES.

Paternal influence.	Maternal influence.
82	68
9·1 per cent.	7·5 per cent.

It will be observed that this table does not confirm the dictum of Esquirol and Baillarger, as to the preponderance of the mother's influence in transmitting insanity.

In Thurnam's experience the paternal and maternal influence is nearly equal. In Brigham's, the latter prevails; while in mine the former predominates. It is, however, to be remembered that the number of males under treatment in the Crichton Institution is much greater than the number of females, a condition which is reversed in Thurnam's experience, while in that of Brigham the sexes are nearly equal. To supply a means of comparison, I have added to the foregoing tables the per-centages of the cases influenced by the father and mother, in the whole number of cases under the observation of the different authorities. From this it appears, that in Dr. Brigham's experience the mother's influence was more powerful

[1] Esquirol, op. cit., vol. i, pp. 65-67.
[2] Thurman, op. cit. table 14.
[3] Tuke and Bucknill, op cit., p. 243.
[4] Quoted by Morrison, in op. cit., p. 295.

than the father's by 1 per cent., that in Thurnam's it was nearly equal, and that in my own, the paternal influence was more powerful than the maternal by 2 per cent.

Another question of importance arises under this head. *Is the insanity of the mother more dangerous to the females than to the males?* Thurnam and Baillarger answer in the affirmative, and the latter further observes,[1] that the father's insanity is slightly more dangerous to the sons than the mother's; whilst the mother's is twice as dangerous to the daughters. On this subject I subjoin the following table, showing the paternal, and maternal influence on the number of males and females.

TABLE VI.

THURNAM.				BRIGHAM.			
Paternal influence.		Maternal influence.		Paternal influence.		Maternal influence.	
Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
19	20	17	23	42	37	35	56
8·5 p. cent.	8·1 p.cent.	7·6 p. cent.	9·3 p.cent.	7·07p.cent.	6·3p.cent.	5·9 p.cent.	9·5 p.cent.

CRICHTON CASES.

Paternal influence.		Maternal influence.	
Male.	Female.	Male.	Female.
49	33	37	31
9·4 per cent.	8·7 per cent.	7·1 per. cent.	8·1 per cent.

From these tables it appears that the paternal influence acts more powerfully on the males than the females, and that the maternal influence affects more the latter than the former.

Dr. Burrows[2] considers that a child, physically resembling its insane parent, will more probably suffer from mental disease, than one resembling the sound parent. This, indeed, seems a natural conclusion. We have, however, Moreau,[3] on the other hand, stating that there is a "law by which the series of organs which hold under its dependence the psycho-cerebral organization, and that which gives the resemblance, or analogy of physiognomy, are transmitted separately, from the parents to their descendants. So, every time that an individual has presented an analogy of physiognomy, more or less strikiug, with one of his parents, he owed to the other parent, his cerebral organization, as the presence of the hereditary evil has attested."

[1] Quoted by Tuke, op. cit., 243. [2] Burrows, op. cit., 106.
[3] Moreau, op. cit., p. 141.

IV.—*The influence of sex in receiving insanity.*

Table, showing the number of the sexes that laboured under hereditary insanity, and the per-centage of each sex in the total numbers under observation.

TABLE VII.

	Male.		Female.			Male.		Female.	
	Nos.	Per cent.	Nos.	Per cent.		Nos.	Per cent.	Nos.	Per cent.
[1]Hood	121	8·58	240	10·62	[5]Esquirol ...	—	—	105	13·30
[2]Guislain.....	7	4·75	12	7·172	Mania in his own establishment..	38	32·20	37	24·66
[3]Thurnam ...	65	32·82	77	35·48	Salpêtrière...	—	—	88	21·83
[4]Marcé, puerperal mania	—	—	24	42·85	Crichton Institution ...	253	48·56	194	51·05

The foregoing table requires no comment, as it indisputably shows the greater liability of the female sex to suffer more from hereditary insanity, than the male. One of Esquirol's observations, however, does not concur, but the others strikingly affirm the conclusion arrived at.

V.—*The frequency of the different forms of insanity among hereditary cases.*

The form of mental disease most frequently transmitted from parent to child, was among the questions much discussed by the earlier writers; but recent observers have come to the conclusion, that, all varieties of mental disease are transmitted, and that a different form may appear in the child, from what existed in the parents. But actual insanity, such as mania, melancholia, dementia, monomania, imbecility, idiocy, and even general paralysis, is not all that is transmitted. In those families in which we have hereditary predisposition to mental disease, we find also epilepsy, hysteria, chorea, apoplexy, paralysis, hypochondriasis, convulsions, high nervous irritability, eccentricity, ill-regulated conduct and temper, immoral tendencies, false and erroneous understandings, stupidity, and waywardness.[6] To these, Whitehead[7] and Marcé[8] add obliteration of one or more of the sensorial faculties, such as hearing or sight; and

[1] Hood, op. cit., p. 51, et seq.
[2] Guislian, 'Les Phrenopathies.' pp. 5 and 6.
[3] Thurnam, op. cit., Table XIV. The 71 cases before alluded to, are not here included.
[4] Marcé, op. cit., p. 109.
[5] Esquirol, op. cit., vol. i, pp. 62—64, et vol. ii, p. 144.
[6] Prichard on 'Insanity,' p. 161.
[7] Whitehead, op. cit., p. 42.
[8] Marcé, op. cit., p. 109.

the former observes, in such cases, a vicarious action, by which the child, born blind or deaf, of insane parents, is often in no way defective in its mental faculties.

To the sad list of ills that the hereditary predisposition frequently bestows on its inheritors, Moreau[1] adds the rarer gift, genius. However it may be accounted for, certain it is, that those who shed a lustre on the age in which they live, are sometimes members of families, in which nervous disease, and even insanity itself, is present, and that they frequently, in their own persons, exhibit nervous anomalies, and deep moral perturbations, which are not accidents in, but probably necessities of, their organization.

Haslam[2] well observes that "hereditary predisposition shows itself in those who, although they do not exhibit the broad features of madness, shall yet discover propensities equally disqualifying for the purposes of life, and destructive of social happiness."

The hereditary tendency to suicide, is illustrated in many instances, and numerous cases are detailed by authors. Burton, and Crichton, insist on its importance in melancholy, and Combe[3] says that hereditary predisposition is one of the most fruitful sources of mania, and Moreau[4] that it is recognised as the frequent source of propensities to crime. Morel[5] and Marcé,[6] however, unite in thinking that, as a rule, particular forms of mental disease are not inherited, and that it is only in rare instances that exactly the same form appears in parent and offspring, suicide being possibly an exception. All forms of insanity—mania, melancholia, monomania, and general paralysis, appear reciprocally to reproduce each other; and just as we have in the course of an individual case, varying forms of mental disease, so, in the line in which hereditary predisposition exists, we find, in the same way, similar varieties of disease appearing in different individuals of the race. This is not unfrequently seen in individual families, where you have disease of the parents manifesting itself in the children in various forms; one is eccentric, another maniacal, another melancholic, and so on. Many such instances could be referred to and recorded, in illustration of this statement.

The following table shows the proportions of hereditary cases in the different forms of insanity, as observed in the Crichton Institution, and by Esquirol.

TABLE VIII.

Mania.	Melancholia.	Monomania.	Moral insanity.	Idiocy and Imbecility.
51·0 per cent.	57·7 per cent.	49·0 per cent.	50·0 per cent.	36·0 per cent.

Dipsomania.	General paralysis.	Dementia and Fatuity.
63·4 per cent.	47·6 per cent.	39·5 per cent.

[1] Marcé, op. cit., p. 108, Moreau quoted. [2] Haslam, on 'Madness,' p. 230.
[3] Combe, op. cit., p. 92. [4] Moreau, op. cit., pp. 111, 112.
[5] Morel, op. cit., p. 116. [6] Marcé, op. cit., p. 106.

ESQUIROL.[1]

Mania.	Melancholia.
24·9 per cent.	48·67 per cent.

Melancholia, after dipsomania, seems to have the greatest tendency to appear in the hereditarily predisposed, and idiocy and imbecility, dementia, and fatuity, the least. I have not been able to construct a table showing the form of insanity appearing in the father, and contrasting it with that which appeared in his offspring. The materials at disposal for such a purpose are necessarily very few, and difficult to obtain.

Moreau[2] considers hereditary predisposition complete, when the descendants have the same intellectual disorders as their parents, produced by the same causes, at the same time of life; and incomplete, when the disorder is not the same as in the parents, but manifest a filiation to their disease.

Cases of hereditary predisposition have been divided into four classes.[3] *First*, those in whom the nervous temperament is congenital, such cases are more liable to insanity than others, they become easily excited under different circumstances, and the nervous condition created by the hereditary tendency is such that the most trifling causes produce in them madness. *Second.* In this class hereditary predisposition manifests itself in intellectual, physical, and moral phenomena, which approach insanity. The insanity appears more in the acts than in the words. Such cases are eccentric, irregular, and sometimes immoral in action. They are incapable of directing their faculties to any wise or useful object; they may have some brilliant points, but, in spite of these, they are intellectually sterile, and sometimes physically so. They produce absurd schemes, are discoverers of utopian impossibilities, and attempt the resolution of insoluble problems. Their mania is of short duration, and comes on in sudden paroxysms, in which they commit dangerous acts. The nervous temperament generally prevails, and periodicity is well marked. *Third.* This class consists of imbeciles, and idiots of small head, and low stature, hereditary predisposition having existed in the line of their progenitors for several generations. *Fourth.* Idiots, and imbeciles, are comprised in this class, produced from parents who themselves had no hereditary taint, but who had, from some cause or other, communicated this sad inheritance to their offspring.

In conclusion, it may be remarked that the various forms assumed in hereditary insanity, have a striking analogy in those assumed in the hereditary tubercular disease, for just as we have imbecility, idiocy, mania, and other forms of insanity, coming on at various periods of

[1] Esquirol, op. cit., vol. ii, p. 144. [2] Moreau, p. 114.
[3] Morel, op. cit., p. 258, et seq.

life, so we find hydrocephalus,[1] tabes mesenterica, scrofulous enlargement of the lymphatic glands, and phthisis pulmonalis, appearing at different periods of development. As in the former case, we observe one form of insanity being transmitted and appearing, in the next generation, in a different form; so also in the latter, we have different forms of the tubercular disease, apparently generating each other, in an infected race. A maniac may produce a melancholic or imbecile, while a phthisical patient may generate a hydrocephalic or scrofulous child.

VI.—*The age on first attack in hereditary cases of insanity.*

Esquirol[2] observes that, in hereditary cases, the disease often comes on at the same period of life as in the progenitors; and he and others detail many cases in illustration.[3] *Hérédité* appearing at the same time of life, and pursuing the same course in the offspring as it did in the parent, is called by Moreau perfect.[4] Mental derangement is not likely to occur until the mind is fully developed. Should it appear before this period, or just at it, without there being any other cause likely to induce disease, it is probable that the source will be found in hereditary predisposition. Crichton[5] states that, after the age of thirty, sometimes much earlier in life, the hereditarily predisposed to melancholy begin to have indescribable sensations of anxiety, and internal uneasiness, of which they can give no good account, resulting in an attack of mania. In the second of his able papers on hereditary tendency in the 'Journal of Mental Science,'[6] Dr. Maudsley observes that hereditary mania is apt to appear at the age of puberty, and that in the decline of life melancholia and hypochondriasis, having a similar origin, become established.

It may thus be concluded, that no age is exempt from hereditary mental disease, as cases are recorded of mania appearing even at the time of birth,[7] at the age of puberty and manhood, and in the decline of life, so old age may bring with it the circumstances necessary to the evolution of a disease which has been lying dormant for nearly a life-time.

The following table shows the age at which insanity first appeared in the predisposed, and alongside is placed, for comparison, a table from Thurnam,[8] showing the age at the first appearance of insanity in cases generally.

[1] Ancel, on 'Tuberculosis,' p. 379.
[2] Esquirol, op. cit., p. 65, et seq.
[3] Burrows, op. cit., p. 104. Morrison, op. cit., p. 296. Pagan, 'Med. Juris. of Insanity,' p. 35. Combe, op. cit., p. 94.
[4] Moreau, op. cit., p. 114.
[5] Crichton, op. cit., vol. ii, p. 229.
[6] For January, 1864.
[7] Crichton, op. cit., vol. ii, p. 355.
[8] Thurnam, op. cit., p. 71.

TABLE IX.

	CRICHTON INSTITUTION CASES.		THURNAM.
	Hereditary cases.		Cases generally.
	No. of Cases.	Per-centage.	Per-centage.
Between 0 and 10 years	9	2·30	0·96
„ 10 „ 20 „	62	15·85	12·77
„ 20 „ 30 „	128	32·82	32·53
„ 30 „ 40 „	87	22·31	20·0
„ 40 „ 50 „	73	18·71	15·9
„ 50 „ 60 „	20	5·13	10·6
„ 60 „ 70 „	8	2·05	6·03
„ 70 „ 80 „	3	0·77	0·97
„ 80 „ 90 „	—	—	0·24

From this table it appears that the predisposed cases are apt to suffer earlier in life than other cases, that they suffer more at the age of puberty and manhood, and decidedly less as old age approaches.

VII.—*The number of attacks in hereditary cases.*

The influence of hereditary predisposition on the number of attacks of insanity is shown at a glance in the following tables :

TABLE X.—*Crichton Institution.*

	Hereditary Cases.		Non-Hereditary Cases.	
	No. of Cases.	Per-centage.	No. of Cases.	Per-centage.
First attack.....	284	64·69	192	80·0
Not first attack	155	35·33	48	20·0

TABLE XI.—*Cases generally.*

	THURNAM.[1]		HOOD.[2]	
	No. of Cases.	Per-centage.	No. of Cases.	Per-centage.
First attack	324	78·07	635	67·62
Not first attack.....	99	21·92	304	32·37

Hereditary cases have thus a much greater tendency to relapse than other cases. This point in their history may be still more forcibly illustrated. The number of individuals readmitted during

[1] Thurnam, op. cit., Table XII. [2] Hood, op. cit., p. 77.

the last twenty-four years to the Crichton Institution is seventy-eight, and of these no less than fifty-one belong to the hereditary class of cases. The following table shows their mode of distribution.

TABLE XII.

Hereditary mental disease.			Hereditary disease not mental.			No hereditary disease.			Condition as to hereditary disease unknown.		
Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
32	19	51	2	3	5	8	6	14	7	1	8

Some of these patients have been admitted from two to ten times. This tendency of hereditary insanity to recur is one of its most important characteristics, and claims our special attention in the prevention, prognosis, and treatment of such cases. When a patient is frequently admitted into an asylum, it may be almost safely concluded that he labours under hereditary insanity. Such cases are not uncommon, and much may be done, especially in those occurring among the upper and middle classes, to prevent the recurrence of the malady.

VIII.—*The domestic condition of those having hereditary insanity.*

The domestic condition of those having hereditary predisposition, is in the following table compared with results obtained by other observers in ordinary cases of insanity.

TABLE XIII.—*Crichton Institution.*

	Hereditary Cases.		Non-Hereditary Cases.	
	No. of Cases.	Per-centage.	No. of Cases.	Per-centage.
Married	133	29·75	69	28·4
Single	297	66·44	156	64·2
Widowed	15	3·35	18	7·4

TABLE XIV—*Cases generally.*

	THURNAM.[1]		HOOD.[2]	
	No. of Cases.	Per-centage.	No. of Cases.	Per-centage.
Married	117	24·9	1822	49·6
Single	308	65·6	1612	43·9
Widowed	44	9·3	234	6·3

On the whole, it will be seen that, at the time of attack, fewer hereditary cases are, or have been married; and it is somewhat interesting to notice the marked lowness of the per-centage among the widowed, probably owing to the hereditary disease appearing earlier in life, as has been seen in a former part of this paper.

[1] Thurnam, op. cit., Table VIII. [2] Hood, op. cit., p. 27.

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IX.—*The proportion of recoveries and deaths in the hereditary and non-hereditary cases.*

The per-centage of recoveries is higher among the hereditary cases than among the non-hereditary ones; while the per-centage of death is lower among the former and higher among the latter. The former result is partially attributable to the number of re-admissions in the former class.

TABLE XV.—*Crichton Institution.*

	Hereditary Cases.		Non-Hereditary Cases.	
	No. of Cases.	Per-centage.	No. of Cases.	Per-centage.
Recovered	163	36·9	79	32·2
Died.....	92	20·6	56	22·8

TABLE XVI.—*Hood.*[1]

Hereditary.		Not Hereditary.
	Per-centage in Hereditary Cases.	Per-centage in cases not Hereditary.
Recovered	60·3	46·1
Died	4·98	5·26

It will be observed that this table, constructed from Dr. Hood's statistics, agrees in a striking manner with that which goes before. The high per-centage of the recovered among the hereditary cases, is very remarkable, and indicates the curability in the early attacks of this form of mental disease.

X.—*The duration of life in hereditary insanity.*

I believe it will be found that the duration of life is shorter among this class than it is among the insane generally. Appended is a table showing, at a glance, the number of deaths occurring in decennial periods of life in the Crichton hereditary cases, contrasted with Thurnam's similar table of ordinary cases.

TABLE XVII.

	CRICHTON. Hereditary Cases.		THURNAM.[2] Cases generally.	
	No. of Cases.	Per-centage.	No. of Deaths.	Per-centage.
Under 10 years	1	1·13	—	—
From 10 to 20 years ...	1	1·13	—	—
20 — 30 „ ...	7	7·95	13	9·35
30 — 40 „ ...	23	26·13	17	12·23
40 — 50 „ ...	26	29·53	21	15·10
50 — 60 „ ...	17	19·31	27	19·42
60 — 70 „ ...	8	9·09	27	19·42
70 — 80 „ ...	5	5·68	19	13·66
80 — 90 „ ...	—	—	14	10·07
90 —100 „ ...	—	—	1	0·71

[1] Op. cit., pp. 53—55.

[2] Op. cit., Table XXIX. Members of the Society of Friends are believed to live longer than other people.

The mass of the hereditary cases die between the ages of thirty and sixty, while the mass of the insane generally, die between the ages of forty and seventy.

I have endeavoured in this contribution to give some glimpses of the natural history of hereditary cases of insanity, as viewed in the mass—as formed into a group. I have tried to estimate their numbers, trace their origin, and observe the time of life when disease appears in them. I have passed in review the influence of sex, both in producing and receiving hereditary insanity; the most frequent forms in which the disease manifests itself—the domestic condition in which it finds those who are the subjects of its attack; and finally, its influence in the recovery, death, and duration of life of its victims. In passing I have touched on many interesting topics that are yet to be worked out, and there remain over an immense number of points in the history of such cases, which would, if well investigated, enable us better to understand the group of mental diseases with which we have been dealing. These researches are offered to the Profession in the hope that they add something to our knowledge of hereditary insanity.

An Oasis in the Desert of German Restraint.—A Note by Baron Mundy, M.D.

Dr. Ludwig Meyer, of Hamburg, has had the courage to defend the non-restraint system in Germany, and also himself to practise it in the Hamburg Asylum with the best success. It is true that Dr. Meyer had previously visited England, and examined with careful eyes, impartial goodwill, and practical mind, the non-restraint system. Why do not such physicians as Casimir Pinel of Paris, Renaudin of Mareville, Dick of Klingmünster, Neumann of Pöpelwitz, and Erlenmayer of Coblenz, visit England also, and with the same honest intentions as Meyer, study a system which has been practised here for more than twenty years amongst a population of insane amounting to 50,000 patients? It must be a blessing to suffering humanity and a disgrace to those who have the boldness not only to assert that they do not comprehend these facts, but also to call the system an *English swindle,* to hear the voice of Dr. L. Meyer in the *Desert of German Restraint.*

Having for three years been an eye-witness of the non-restraint system in England, and having repeatedly visited more than fifty asylums in this kingdom, I reserve to myself the right to reply

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