

The Neuropathic Diathesis, or the Diathesis of the Degenerate.
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When we examine the purpose and the progress of the animal world from the scientific standpoint, we find that "life is a cycle, beginning in an ovum, and coming round to an ovum again," and the history of the human race, the failures and triumphs of nations, the loves and hates, the baseness and nobility of individuals, appear to be "the mere by-play of ovum bearing organisms." Whatever other purpose is served by our existence, we are certainly placed here to reproduce our kind, and to furnish human figures to play their part in the next scene of the perpetual panorama of life. Moreover, we make man in our own image, after our likeness, and endow him with the characteristics we have inherited from our ancestors, and with those which we have created, for good or evil, in our own life. One of the oldest of books teaches us that the sins of the fathers will be visited upon the children to the third and fourth generations, and we might go further and say that physiological sins will penalize the race for many generations, and even lead to its utter extinction, unless counteracted by the strong antidotes of physiological morality, perfect hygienic conditions, and judicious intermarriage with untainted breeds.

This great law of Heredity seems to me to be the corollary of the general law, that "the life of the individual organism is the recapitulation of its ancestral history." As in the hourly changes of early intrauterine life we reproduce some characteristics of our Piscine, Batrachian, or Avian ancestors, so in the more protracted stages of later intrauterine life, and of independent existence, we reproduce the physical and mental features of our human progenitors. And the features of the parents produce more effect than those of the grandparents, and so on in lessening degree, till the influence of the primordial parent is lost in the accumulation of the influences of more recent ancestors. And as we endeavour to advance to our higher developments —

Move upward, working out the beast,
 And let the ape and tiger die,

we find that it is the more recent influences of the race which are most difficult to eradicate. "In the far-reaching

influences which go to every life," says Robert Collyer, "and away backward as certainly as forward, children are sometimes born with appetites fatally strong in their nature. As they grow up the appetite grows with them, and speedily becomes a master, the master a tyrant, and by the time he arrives at manhood the man is a slave. I heard a man say that for eight-and-twenty years the soul within him had to stand like an unsleeping sentinel, guarding his appetite for strong drink. To be a man under such a disadvantage, not to mention a saint, is as fine a piece of grace as can well be seen. There is no doctrine that demands a larger vision than this of the depravity of human nature. Old Dr. Mason used to say 'that as much grace as would make John a saint would barely keep Peter from knocking a man down.'" Moreover, if the heredity of coarse physical characteristics, the Bourbon lip, the Napoleonic nose, or supernumerary digits be so marked, how terribly potent must be the influence of ancestral taints upon the delicate and intricate organization of the human brain, the acme of the evolution of the vertebrate nervous system. Jonathan Hutchinson has formulated the principle of heredity in the general diatheses. He says, "I tried to show that rheumatism is a modification of the catarrhal diathesis, mainly nervous in its origin, in which the stress of the reflex disturbance falls upon the tissues of the joints. I traced a close parallel between gout and leprosy, alleging that both are food diatheses, being distinctly and definitely caused by certain peculiar articles of diet. Respecting both, we had to remark upon the facts that having been acquired by food, they became capable of transmission from parent to child, and that gout at any rate was prone to receive important modifications in such inheritance." He then proceeds to prove the reality of temperaments, and to discuss the importance of recognizing their existence, and he proposes that parents should keep a life-history of each child; in other words, he suggests that we should each carry a log-book, which should be produced for the inspection of the medical adviser under whose care we place ourselves in the stress of physiological storms. None know better than alienists what a boon such information would be when called upon to give a prognosis in a difficult case. Mr. Hutchinson would place the bilious and melancholic temperaments together as the "hepatic diathesis," and he denies that the latter is commoner in persons of dark complexion. Contrasting, however, in-

dividuals of dark and fair complexions, he points out that the former bear mercurial treatment well, and require larger doses, that they do not bear direct tonics well, that the need of purgatives is greater in them, and that they are often not helped by sea air. This would seem to show that the inheritance of a dark complexion connotes the inheritance of a group of more or less definite characteristics. He further states that "the hæmorrhagic diathesis, so strongly hereditary when once produced, unknown in the lower animals, and frequently coincident in the individual with gout, has its origin in the peculiarities of vascular structure which are developed by gout, and which have become modified and specialized by transmission through many generations. With regard to the occurrence of xanthelasma as a family and almost as a congenital disease, he points out that in such cases the affection is most probably inherited from some ancestor who had acquired the ordinary hepatic form of adults. In these two cases the disease is generally inherited without the bodily condition which originally produced it, and if we follow the argument to its legitimate conclusion, we must believe that the numberless idiosyncrasies as to drugs or foods, the liability to take the contagion of the specific fevers, or to suffer from erysipelas on the smallest provocation, are all examples of diatheses, developed, intensified, and specialized, diatheses brought to a point, in which all trace of the original causation has been lost. Mr. Hutchinson also speaks of malaria and bronchocele as climatic diatheses, capable both of being acquired and inherited. For the explanation of many of the above facts we must appeal to the nervous system, as it alone seems capable of satisfying all the demands of our ignorance. We see the accuracy of the development of hereditary influence upon the nervous system, in the appearance in generation after generation of a peculiar gesture of the hand, a special attitude in sleep, or of characteristic writing. And just as these objective signs, which may correspond to a subjective, intangible mental bias, are inherited, so fundamental modes of mental activity must be born with us —

Grow with our growth, and strengthen with our strength.

We all feel the tyranny of our organization, we sometimes like what our education would teach us to abhor, and we cannot admire what we know to be admirable, and we can thus realize the mental organization of the neurotic, we

understand that they will inevitably develop in certain grooves. And though we may affect much by judicious education, we had surely best begin earlier, and prevent what we cannot cure. There are thousands who rush annually to obey the great instinct of reproduction, and who are certain to produce neurotic offspring. *Hinc illæ lachrymæ.* Hence an enormous lunacy population and a host of mentally-unstable individuals, authors of half the crimes and follies which disgrace our race. It is, indeed, time that the physician from the physiological standpoint, not the lawyer from the monetary, should be the arbiter of marriage.

The study of the neurotic individual who never transgresses the boundary line of certifiable insanity has been much neglected, and yet much may be learnt here. I may venture to give a short history of a case, such as anyone may meet, if he does not lay aside his psychological habits the moment he passes the asylum gate. A. B.; a remote history of insanity in the family, an immediate history also, a paternal aunt is insane, and a brother suffers from *petit mal*; father and mother of normal mental equilibrium. A. B. is of slight build, with delicate irregular features, brilliant eyes, and a sharp, restless manner, and with an extraordinary aptitude for unusual acquirements. We note his instability, he varies —

Is everything by starts, and nothing long.

While refined to a romantic degree about women, he is morally lax in his actions. He is hypersensitive, is not muscular, and does not put on flesh. These remarks apply, *mutatis mutandis*, to his two sisters. To such as these, Dr. Clouston would preach "the gospel of fresh air and fatness," and would say with Cæsar —

Let me have men about me that are fat,
Sleek-headed men, and such as sleep o' nights.

But it would be more scientific to prevent their existence by putting a veto on the union of the neurotic.

I need not delay to further consider the general laws of heredity, but will pass to my special subject.

There are many functional and organic diseases of the nervous system which appear to be the result of an ancestral taint, and which interchange in the life-history of the individual or of the race, and we may roughly divide the various affections thus related into the following groups:—

Group 1.—Forms of neurotic manifestations, the heredity of which is well-marked, but which are not apt to develop unless the individual liabilities are incurred.

The irritable and excitable temperaments.

The liability to shock from slight causes.

The liability to outbursts of extreme passion.

The liability to be easily affected by drink or by injury to the head.

Eccentricity.

Group 2.—Forms of neurotic manifestation, the heredity of which is well-marked, and which are apter to develop in the life-history of individual or of race into the severer neuroses of the succeeding groups.

Neuralgia and migraine.

Headaches, "nerve-storm" headaches, the sensory epilepsy of Hughlings Jackson.

The various conditions comprised under the term "neurasthenia."

Spasmodic asthma.

Group 3.—Development of inherited and acquired neuroses, manifesting themselves at the later periods of life, being of moderate strength, and not necessarily ending in mental death.

Various *vesaniæ* of adults.

Group 4.—Development of inherited, and more especially of acquired neuroses, which attain great strength, and result in complete mental extinction in the individual, and in the inheritance by the offspring of a strong neurotic tendency.

General paralysis.

Group 5.—Inherited neuroses, mild as regards the form, severe as regards the time of their manifestation, and very apt to develop in the life of the individual to more definite forms.

Chorea.

Hysteria.

Various forms of epilepsy of milder variety.

Group 6.—Forms in which a strong neurotic inheritance manifests itself early in the life of the individual, and often ends in permanent mental perversion or mental death.

Various *vesaniæ* of adolescents.

Epilepsy of adolescents.

Moral insanity.

Criminality.

Primäre Verrücktheit.

Group 7.—(a) Strong inheritance manifesting itself in infancy.

Infantile convulsions.

Infantile epilepsy.

Hydrocephalus.

(b) Extreme development of neurotic inheritance, mental death from birth, or rather the entire absence of any intellectual life.

Idiocy.

One further step is possible, when the law of the limited dissimilarity or similarity of parents is broken there is no offspring, as in many cases in the following pages.

Group 8.—Anomalous forms, as yet but indifferently associated with the neurotic group which is the subject of this paper.

Locomotor ataxy.

Diabetes.

This classification is merely an enumeration of the forms in which the neuropathic diathesis manifests itself, and the grouping is provisional. No doubt other diatheses co-operate or antagonize the neurotic, but I shall not venture upon such theoretical grounds. I must ask the reader to remember that in the following pages, I shall not discuss this classification nor confine myself to the order of the groups. I shall merely enumerate and illustrate the laws which seem to have governed the alternations and manifestations of the various neuroses of the 258 men with well-ascertained heredity, admitted here between January, 1885, and September, 1886, together with a much larger series of cases of neurotic manifestation in the families of the 258 patients. I hope, however, that each group will be found to be illustrated under one or more laws. In the cases in which neurotic inheritance is denied, I can only plead the ignorance of the lower classes with regard to their ancestors, and our imperfect knowledge of the general laws of heredity. Neurotic manifestations occur in a large number of individuals, in whom no neurotic inheritance can be proved, just as each individual develops characteristics which we cannot account for by heredity. I can only express my belief that as our knowledge increases, so will the number of inexplicable developments diminish, as has been the case in all departments of science. All the so-called freaks of nature are examples of general laws. Moreover, the influence of acquired neuroses is very extensive. As

Dr. O. W. Holmes quaintly says, "Each of us is only the footing up of a double column of figures that goes back to the first pair. Every unit tells, some of them are plus, and some minus. If the columns do not add up right, it is commonly because we cannot make out all the figures."

I may now briefly give the headings of the fifteen sections which follow:—

Section 1.—An individual may start a neurosis in his own life.

2.—An individual may start a neurosis in the life-history of his family.

3.—The neurosis may increase in strength from generation to generation.

4.—The neurosis may diminish in strength from generation to generation.

5.—The neurosis may skip a generation—*Latency*.

6.—Postponement of the neurotic tendency under favourable circumstances; its appearance as premature senility.

7.—The forms of neurotic manifestation may alternate in the life of the individual.

8.—The forms of neurotic manifestation may alternate in the life-history of the family.

9.—The form of the neurotic manifestation may be determined by the superior influence of one or other parent—*Prepotency*.

10.—Transmission of identical tendencies—a form of *prepotency*.

11.—The inheritance of a slight neurotic tendency connotes a ready breakdown but rapid recovery.

12.—The inheritance of a strong neurotic tendency connotes—

A. Perpetual instability.

B. Early and complete breakdown.

13.—Influence of inherited and acquired neuroses in epilepsy.

14.—Influence of inherited and especially of acquired neuroses in general paralysis.

15.—Summary of ideas suggested by investigation, but not substantiated. *Conclusion*.

Section 1.—An individual may start a neurosis in his own life. The alcoholic man may, under slight causation, injury to the head, or shock, or worry, develop a sharp attack of insanity, or may completely break down as a general paralytic. This is a law which I would venture to insist upon. The man

who indulges to excess in alcohol, puts himself in the position of a man who has inherited a slight neurotic tendency, which manifests itself as a temperament, or as one of the liabilities of the neurotic which I have placed together in Class 1. The Nemesis of natural law in the one case visits the sins of the parents upon the offspring, and in the other visits the sins of the individual upon himself in the first instance. And the man who has thus created a neurosis in his own lifetime, is in a worse plight than the man who has inherited one, for the former will develop under a slighter stimulus than the latter. I am very anxious to avoid repetition, and it is very difficult to attain my object, as most of the cases illustrate several laws. The acquirement of neuroses will be most abundantly exemplified as we proceed, and I may refer the reader to the cases related in Sections 2, 3, and 14, and for statistics to Sections 3, 11, 14.

The Rev. J. Horsley, in his recent "Jottings from Jail," lays great stress on the relation between drink and criminality.

Section 2.—The individual may start a neurosis in the life-history of the family. The children of alcoholic parents who have not incurred their liabilities may be imbecile or epileptic, or may break down at any of the physiological crises of life; or a mere predisposition to alcohol may be transmitted, which, if not overcome, may, later in the life of the individual or of the race, manifest itself in the form of a definite neurosis.

CASE 5.—Melancholia. W. E., single, age 24, first attack; admitted July, 1886. Has been a heavy drinker, especially during the two weeks preceding his attack. March, 1887, is slightly improved. Family history: Father and mother drank heavily. This case illustrates the inheritance of a predisposition to drink, a liability to be easily affected by drink, and the early development of a definite neurosis. Recovery is exceptionally slow.

CASE 7.—Acute mania. W. D., single, age 31, duration a year; admitted July, 1886, heavy drinker. Family history: Father drank, uncle insane. Here the alcoholic and neurotic diatheses combine, and an incurable attack results. With regard to the details of this and other cases, I must ask the reader to take it for granted that when not given, they are either unascertainable or have no bearing on my subject.

CASE 28.—Melancholia. J. B., married, two children, age 57, first attack, duration a year. Has indulged freely in alcohol, is prematurely senile both in body and mind. Attack induced by

shock received on witnessing the sudden bursting of a canal. Family history: Father and uncle drank hard. Brother phthisis. Here we have an inherited predisposition to drink, the indulgence of the tendency, a premature senility as the result, culminating in an attack of insanity, which develops when the liability to be easily affected by shock is put to the test.

CASE 30.—Acute mania. J. C., age 37, first attack; admitted March 30th, 1886, recovered May 21st. Very alcoholic, as was his father, who also became insane.

CASE 31.—Active melancholia. P. T., age 51, single, first attack, has always been of a melancholy turn of mind, and has drunk freely. Is an incurable case. Father drank. Here is a remarkable sequence, father alcoholic, son predisposed to alcohol, melancholic temperament, active melancholia.

CASE 68.—General paralysis. A. S., age 39, first attack, heavy drinker, noted for his irritable and excitable temperament. Father drank hard.

CASE 74.—Acute mania. G. S., age 42, first attack. Has indulged freely in alcohol, and had an attack of delirium tremens when 36. At 39 epilepsy developed, at 40 he received a severe injury to the head, which laid him up for six months. Five weeks before admission he had a second attack of delirium tremens. Admitted May, 1885, recovered September. Readmitted December, 1885, after a bout of drinking, recovered February, 1886. Family history: Father drank hard. A remarkable sequence is here seen, and the development of a predisposition to a definite neurosis is well illustrated. He indulged his predisposition, and incurred his liability to be easily affected by drink or by injury to the head. He breaks down first with delirium tremens, then in three years epilepsy develops, in another three years suffers from an attack of delirium tremens passing into mania, and in four months after his recovery from this, he develops, after a bout of drinking, a second attack of mania without a preliminary attack of delirium tremens.

CASE 84.—Acute delirious mania. J. A., age 25, first attack, duration five days, died on eleventh day of illness. The attack developed on cessation of erysipelas of foot. Has been a steady man. Family history: A. A., his mother, age 45, admitted September, 1884, with climacteric melancholia of an active type, recovered November, 1886. Father drank, a brother drank. The influence of the father is prepotent in one son, and of the mother in another. The son breaks down at a physiological crisis, just as the mother had done.

CASE 101.—Acute general paralysis. J. S., age 33, first attack, duration one month, admitted April, 1885, died July. Heavy drinker; parents drank.

CASE 104.—General paralysis. W. B., age 36, first attack, duration two years, died a week after admission. Drank hard.

Family history: Father drank hard, and died of general paralysis at W— Asylum.

CASE 109.—General paralysis. J. B., age 47, first attack, duration six months, has been a drunkard all his life, as was his father before him.

CASE 112.—General paralysis. W. H., age 32; first attack, duration a fortnight; admitted December, 1885. March, 1887: The case now presents a good example of almost complete remission. Family history: Father, a drunkard, became epileptic; brother, J. H., nervous temperament, brain fever at 20, became insane when 27, and is now in a state of terminal dementia at L— asylum.

Section 3.—The neurosis may increase in strength from generation to generation, if it is not counterbalanced by physiological morality and the judicious antidote which marriage into a healthy stock affords. Neuralgia or megraine in the parent, under circumstances favourable for the development of a neurosis, may be represented in the offspring by epilepsy or insanity, and the neurosis will generally manifest itself at an earlier age in the second generation. The general law of development teaches us that characteristic features tend to be reproduced in the offspring, at the period corresponding to that in which they appeared in the parent, and the instances which Darwin quotes are too well known to require repetition. But my investigation has taught me conclusively, that the neurosis manifests itself at an earlier age in the second generation, and many instances will be quoted as we proceed. Moreover, while the general law is undoubtedly true of certain special features, the whole history of the development of the animal world shows conclusively that accidental improvements in the parents are emphasized in the offspring, both by more distinctive form and by earlier appearance, else surely evolution were at an end and perissodactyls would be born with the full number of toes. And what is true of development is true also of degeneration. Mr. Hutchinson has proved that psoriasis, which is never congenital, is very hereditary, is prone to skip a generation, but rarely occurs in more than one member of a family, may culminate in ichthyosis, which is very hereditary, occurs in several members of a family, and at a very early age. Let us see what statistics teach us upon this point. Of the 723 males admitted between January 1st, 1885, and September 10th, 1886, reliable family histories

were obtained in 471, and evidence of the existence of a family neurosis in 54·7 per cent. of these (for details see Section 14). I tabulated the average age on first attack in all cases, exclusive of general paralytics, with the following results:—

With a family history of both insanity and drink ...	28·
With a family history of insanity	32·37
With a family history of drink	35·48
Said definitely to have no family neurosis	38·7

CASE 12.—Melancholia. J. L., age 36; first attack; always eccentric; very alcoholic. Father and mother were hard drinkers. Here we have a neurosis started by alcohol, manifesting itself at an early period as eccentricity and culminating in insanity.

CASE 66.—Senile dementia. I. M., age 72; first attack, duration three months; married, seven children, one daughter imbecile. Family history: All the family have been hard drinkers, including the patient, his parents, and his children. Here we have a culmination—first generation, drink; second, drink and senile dementia; third, imbecility in one member of the family and alcoholism in the others. If it were possible to trace the family history further, doubtless we should find other developments.

CASE 83.—Mania. J. W., age 32, married, no children; first attack. Personal history: Alcoholic for years, severe injury to head when seventeen, epilepsy when twenty-five, which persists; said to have become suddenly insane twenty-four hours before admission. Family history: Maternal uncle insane, cousin phthisis. The neurosis was here not a strong inheritance, and displayed itself as a liability to be easily affected by drink or by injury to the head. These individual liabilities being incurred, the neurosis is strengthened during the life of the patient, and we have epilepsy at twenty-five, and incurable insanity at thirty-two, and a non-reproductive existence, the extinction of a bad stock.

CASE 87.—Dementia. H. B., age 67; duration of attack, six years. Epilepsy developed at fifty-seven. Daughter became insane at an early age.

CASE 89.—Acute mania. J. B., age 17; first attack; admitted March, 1885; recovered July. Family history: Grandfather alcoholic; father had five attacks of insanity, the first occurring when he was 19, and he died during the last, aged 46, from phthisis.

Section 4.—The diathesis may decrease from parent to child, and die out if the tendencies are repressed, the general hygienic conditions are good, and the breed is strengthened by crossing with healthy stock. It is not necessary to men-

tion examples of this. We know, chiefly by the negative evidence that the cases do not come under our notice, that the majority of the offspring of neurotic stock do not become epileptic or insane. It were indeed a bad look-out for the race if the tendency to develop did not generally over-ride the tendency to degenerate. That we do not meet with a larger number of cases is accounted for by the facts, that family histories are forgotten or concealed, that the females marry and thus they or their offspring may be admitted under different names, that the neurotic members of a family are those most likely to die young or leave their native place. Moreover diatheses may oppose diatheses (see below), and favourable crossing with healthy breeds prove antidotal. Finally we know that any peculiarity, such as the hæmorrhagic diathesis or the appearance of supernumerary digits, may be most irregular in its appearance. It has been suggested that even the numberless sporadic cases of tuberculosis are instances of a diathesis with occasional manifestations, just as there is, according to Mr. Hutchinson, a "cancerous diathesis," and "it is clear that a state of health may be transmitted which gives proclivity to the disease without actual conveyance of the cell germs." With regard to the development of the neurotic diathesis, the nemesis of natural law may sometimes be satisfied with its development in single instances. And we must suppose that each embryo, in the power of its tendency to develop, and in its receptivity to malign influences, differs from every other. Finally there is the law of "individual variation," which, as Dr. Maudsley says, is particularly strong in the human species, "because it affords infinite scope for modifications, neutralizations, and variations of qualities."

(To be continued.)