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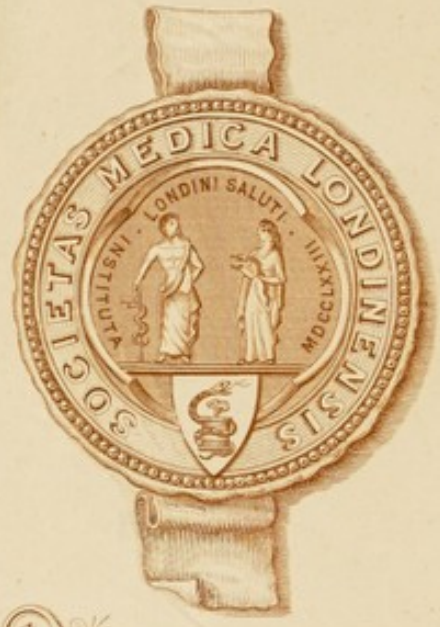

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INSANITY.

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INSANITY.

INSANITY is a general term which, for the sake of convenience, by popular use is applied to every variety of unsoundness of mind. We use it much as we use the word "fever." Medical men know that under the latter are ranked disorders differing widely in their nature and origin, as typhus and typhoid fever, malarial fever, surgical fever, septic fever, and so on. We do not describe these under one head as "fever." So we cannot describe or define under the one word "insanity" the whole mass of disorder to be seen within the walls of a large lunatic asylum. Among the inmates of such a place we may find congenital idiots and imbeciles varying greatly in mental capacity, persons suffering from organic disease of the brain, from the results of epilepsy, or chronic alcoholism, or syphilis, and besides these a number whose minds are disordered and subject to delusions and hallucinations—the people who are in common parlance called insane. And these again may be divided into the curable, who will get well and go away, and the incurable, always the larger number, who will remain in the same condition, or as age advances will gradually deteriorate until death releases them. They resemble one another only in this, that they are all of unsound mind and out of harmony with their environment, and are taken care of in such an institution because they are incapable of taking care of themselves or managing their affairs. This, of course, is a civil and not a medical definition. What the medical aspect of their disorder is must be now considered. Some writers speak of the *insanities* instead of *insanity*, which is a useful way of recording that we have not to deal with one form of disorder only. Just as there has been great differentiation of brain and spinal disorders, which formerly used to be comprised under the general terms brain disease and spinal disease, so as time and knowledge advance, insanity will not be kept as the one word half medical, half metaphysical, which is to cover every kind of mental trouble, but there will be more and more distinct and separate disorders which we may call insanities if we choose, or disorders of mind, or, what is still more correct, disorders of brain affecting the mind.

Five and twenty years ago I wrote that "I am convinced that the only method by which we shall attain an insight into the mysterious

phenomena of unsound mind is to keep ever before us the fact that disorder of the mind means disorder of the brain, and that the latter is an organ liable to disease and disturbance, like other organs of the body, to be investigated by the same methods and subject to the same laws."[1] Everything that has been done by investigators since the above date tends to confirm this view.

CEREBRAL ANATOMY.

Anatomical investigations, though they have been carried on unceasingly during all this period, have not done much towards the explanation of the disorder we call insanity, or the localization of the functions we call mind. Modern microscopic methods have taught that the nerve corpuscles do not anastomose by means of processes, but are separate and distinct and function only by contact.[2] Various advances have been made in our knowledge of the different layers of cells and their functions. Evolution shows that in the human brain there is the highest development both of structure and function, that this development has gone on through countless ages in the animal kingdom, and goes on in each individual from fœtal to adult life, during which damage or defective nutrition may occur and arrest it.

Localization of function as regards motion and sensation is laid down with tolerable certainty, and we may infer from it that the mental faculties are differentiated and have different seats; but these seats have not as yet been determined and experts differ widely in their views on the subject. "It seems reasonable to assume that there may be higher and lower degrees of complexity of evolution in the nervous structures, but we have as yet no conclusive proofs, either that the various degrees of evolution occur in the same centres, or that there exist separate or more highly evolved centres for the physical correlates of mentation."[3] The most recent writers agree to accept Ramon's and Golgi's description of the arrangement of the cortical cells. There are in a convolution of the Rolandic region four layers of cells. The first, called the superficial or molecular layer, is formed by a system of neuroglia fibre cells called by Andriezen caudate cells, which give rise to two distinct systems of fibres, viz., a tangential plexus radiating from the bases of the cells, and descending tufts of fibres passing through the subjacent layer and even reaching the third. Besides these there are ten or eleven different kinds of structures (glia and nervous) which enter into its composition, the bulk of them being neuroglia and not nerve cells. The second, called the layer of small pyramids, contains a number of cells, sometimes fusiform, sometimes pyriform, triangular or polygonal, interspersed with

a large number of small pyramidal cells with apical processes which end in tufts in the superficial layer. Collaterals are given off from those apical processes and also from the axis-cylinder process. The lateral expansions are numerous, extend for long distances, and end without anastomosing in similar expansions of other cells. The third layer, the zone of large pyramids, resembles the second, except in the size of the cells which are known as giant cells. These cells may be divided into two classes: those with short apical processes which do not pass into the superficial or molecular layer but terminate deeper, and those with long apical processes which always reach up to and end in the superficial layer. The fourth layer is a zone of polygonal cells, egg-shaped, spindle-shaped, or triangular. The apical processes of these cells do not reach the superficial zone, and the collaterals of the axis-cylinder process either end in terminal ramifications or form a plexus round some of the nerve fibres of the white medullary substance. Of the cells entering into the constitution of these layers Andriezen enumerates eight types: (1) The pyramidal with long apical process; (2) the pyramidal with short apical process; (3) the ambiguous which may be bicornate, globose, fusiform; (4) the granule cell; (5) the fusiform, with ascending axis-cylinder process; (6) the fusiform with descending axis-cylinder process; (7) the oblique and the inverted pyramidal; and (8) the polygonal with short branching axis cylinder.

Ramon y Cajal is of opinion that the psychical functions are inseparably associated with the presence of the pyramidal cells, because as we ascend in the animal series these bodies become larger and larger and more complicated. He is also of opinion that these pyramidal, or, as he calls them, "psychical" cells, may exercise their functions more fully and more usefully the greater the number of the collateral expansions of their axis cylinder, and the more copious, broad, and ramified their lateral and basal expansions, which have no anatomical connections and must therefore transmit impressions by contact.

There is an advance in complexity as we ascend from the reptilian to the mammalian brain, and that which has been described as the mixed pyramidal or polymorphic system of cells with short apical expansions is not found in the reptile. The order of progress is this: "We have first an increase of cortical grey expanse, until in man there is much complexity and depth of convolution of the grey substance. There is an increase in the development of the corpus callosum and an increase in the whole cerebral mass, both absolutely and relatively to the rest of the encephalon, from the lower mammals up to the higher mammals and man. The white matter of the cere-

brum is largely composed of association fibres which interweave in the most complex manner, and connect this or that cortical area with a number of others. In the human brain these form the main bulk of the white-fibre system, the others being the callosal and the upward and downward projection system. While many of these association fibres and commissural fibres are derived from the long pyramidal and ambiguous cells, the whole system of mixed pyramidal or polymorphic cells, *i.e.*, the fourth layer, contributes largely also to the association system." [4]

The grey substance and white substance of the brain differ widely as regards their supply of blood. The former is supplied by the arteries of the pia mater, and the quantity of blood thus brought is very large. The white matter of the cerebrum is supplied by small arteries which come off at right angles from the three cerebral arteries near their origin, and the supply is not nearly so abundant.

Anatomically the distribution of the arteries and veins is well ascertained. But the vasomotor system is not definitely made out. "It has not yet been proved how far we may regard the cortex as possessing vasomotor centres. With arterial systole we have vasoconstrictor influence, and with the arterial diastole we have vasodilator influence at work; but, as pointed out by Meynert, mental processes are not interrupted by arterial systole; therefore they must to a certain degree be independent of functional hyperæmia. Meynert thinks that this independence of mental acts may possibly be due to the fact that the cortex itself acts as a vasomotor centre in its relations to subcortical centres; and arguing from the evidence of the influence of cerebral activity over the vasomotor centre, he concludes that the vasomotor nerves of the cortex do not reach the blood-vessels at once, but are interrupted in the subcortical vasomotor centre; and that these subcortical centres must be constantly in a state of activity for the vascular innervation of the cortex." [5]

That the influence of the cortex has much to do with the supply of blood must be easily recognized from the phenomena of every-day life. Mental excitation, whether pleasurable or painful, causes an increase of vascular action in the brain and prevents sleep. On the other hand, bodily causes may also, by increasing the action, prevent sleep, causes such as alcohol, tea, tobacco, and in some opium. These are not mental, but they equally cause an increase of the cerebral vascular action, and we hear the vessels pulsating with increased energy in our head as it lies on the pillow. Through the mental action of the cortex the nutrition may be soon disordered, for the increased action means increased waste, and intracranial pressure with venous or capillary stasis will soon give rise to imperfect nutri-

tion. It may also be due to pathological changes in the vessels themselves, atheroma, fatty or calcareous degenerations, or be the result of alcohol, syphilis, or old age. Knowing as we do how large is the supply of blood necessary for the proper function of the grey matter of the brain, it is obvious that any interference with this, either by diminution or increase or defective quality, must almost at once be apparent in some alteration of the normal action.

As a result of this hyperæmia we find a great strain thrown upon the structures which are concerned with the removal of the waste products of the brain. There are no true lymphatics, but their place is supplied by a perivascular system which leads from the nerve cell to the true lymphatic vessels. This system is constituted as follows: 1. There are pericellular sacs or spaces around the larger nerve cells, the brain substance having, as it were, receded from the cell, so that it is enclosed within a circular, oval, or pyriform space. 2. These sac-like dilatations are contained within a perivascular channel and are prolongations of the cellular elements of the adventitial lymph sheath, which is loosely applied round the arterioles and venules, and is contained in a non-distensible channel of the brain substance, the perivascular channel of His. 3. Besides these channelled vascular tracts and saccular ampullæ along the capillary tube we find a lymph connective system constituted by neuroglia cells, giving off two sets of processes, the one, an enormous number of extremely delicate fibres which spread into the intervascular area around, and the other, a much thicker, coarser process which, often after a tortuous course, ends in the adventitial sheath of the blood-vessel. These, which have been called Deiter's or spider cells, play an important part in the reabsorption and distribution of effete material and surplus plasma, and become hypertrophied and morbid if there is any arrest in the escape of perivascular lymph from the cortex.[6] It is also supposed that the Pacchionian villi afford a method of communication, extending, as they do, from the arachnopia through the subdural space.

Neuroglia.—The whole substance of the brain, gray and white, is pervaded by a protective system of neuroglia fibres, a fine diffuse feltwork of fibrils radiating from stellate fibre cells scattered throughout the whole cerebral mass. They exhibit a more condensed fibre feltwork in certain regions, especially the surface region of the cortex and along the borders of the intracerebral vascular canals, and act as an admirable protective mechanism.[7]

PATHOLOGY AND ETIOLOGY.

These anatomical structures are common to all brains of the human species. The average man possesses them and with them is enabled to live the life of an average member of the society to which he belongs, whether it is the lowly developed life of the savage or the highly complex and differentiated association of civilized races. If he cannot live this life, but instead of being in harmony with it is incapable of adjusting himself to his surroundings, the reason for this want of harmony must be sought. We have now to consider only the individual and contrast him with the average of those about him. If the society in which he lives is highly complex and one gradually evolved through many ages, it follows that his mental nature must also be highly evolved, that there must be great complexity of feelings and the relations of feelings, and the composition and ideas of relations of which mind consists. It may be that this complexity is never reached, that the developing child is never sufficiently evolved to reach the high mental attainment of the right rule of conduct which regulates the affairs of life and society with judgment, prudence, and restraint. Congenital defect, imperfect development, or improper training may prevent it; or when it has been attained, it cannot be retained owing to the slight organization and instability of the highest centres, which are continually giving way under the strain of ordinary life, or such causes as alcohol, syphilis, or epilepsy. The highest centres become impaired and lose the command of the whole system, and the lower centres of the reduced brain come into action unfettered and uncontrolled, and so the individual sets at defiance the laws and conventions of society and the reversed process sets in. Instead of the evolution to a higher level where "altruistic sentiments" and "object consciousness" are cultivated and organized, the egotistic feelings or subject consciousness rise in proportion, the reduction brings a man down to the level of a child or an uneducated and untrained person, nay, it may even bring him to a level lower than that of a savage.

Predisposing Causes or Tendencies.

When we have before us a patient who has become insane it is necessary that we examine to the best of our opportunities and ability his life history—the history of his parentage, birth, and bringing up, and the conditions and causes which have put him out of harmony with his surroundings, his fellow men and women, and his position in his society.

Heredity.—Most important but most difficult to investigate is his parentage. In every book we find heredity mentioned as one of the chief causes of insanity, and statistics are given by various authors of the number of cases in which there was a history of inherited disease. So difficult is it to ascertain this with accuracy that it is not surprising that writers vary greatly in the numbers they arrive at, one observer attributing ten per cent. of cases to this cause, another no less than ninety. Probably no two form their calculations in the same way. One man reckons only the patients whose insanity is inherited in the direct line from father or mother, while others take into account that which is found to exist in collateral branches. Moreover, insanity may appear in a family the former generation of which has been free from it, but has manifested neurotic disease, such as epilepsy or dipsomania. It is most difficult to get at the true history of a family even for three generations. The history of two grandfathers and two grandmothers is very hard to ascertain with anything like exactness, but if we go back still further and try to work out the history and disorders of four great-grandfathers and four great-grandmothers, our task is wellnigh hopeless; and it is important that we should know the career not only of those in the direct descent but of all the uncles and aunts and cousins, if we are rightly to appreciate the influence of the inherited taint. I know families in which insanity has existed beyond a doubt in three generations, but it cannot be thoroughly investigated because any question on the subject is at once evaded, or a direct negative is the only response we are able to get. If we could ascertain with accuracy the individuals in a large family who have lapsed into insanity or have been the victims of neurotic disease, we ought also to inquire as to the causes of the breakdown, and why certain people have fallen while others have escaped. Here again we are met with difficulties which are insuperable. A family becomes scattered, some going to the colonies or foreign lands, and we can gain no information about them on which any reliance can be placed. The relatives withhold the fact that some have become insane; if they have taken to drink, this is equally withheld, and of injury to the head or syphilis, probably nothing is known. It would be most interesting to know why others of the same family escape. Some do not, and though not insane, are neurotic, afflicted with hysteria, hypochondria, epilepsy, or neuralgia. Yet we find some, even in a family saturated with insanity, who are strong in mind and body, and apparently as little likely to become insane as any we know. What are the conditions in which these have been brought up and lived?

Certain laws of heredity have been laid down by Darwin and

others which have to be considered by those who have to treat of this subject, and they have been ably set forth by Dr. Mercier in his papers on the "Data of Alienism." "The first and most fundamental law of heredity is that every attribute of the parents tends to be inherited by the offspring. Inheritance is the rule, non-inheritance the exception." It is not said that every attribute is inherited, which would be manifestly false, but that every attribute tends to be inherited, and will be, unless some opposing influence counteracts this tendency.

Mercier mentions certain propositions which express the partial operation of this law. The first is "that an attribute which appeared in the parent at a certain period of life tends to appear in the offspring at a corresponding period." This may be true of the ordinary changes in the lower animals, but we have not enough statistics to show that it is the rule in the insane. Another is that "when the same attribute appears in several generations, but is not congenital, it may appear at an earlier age in each successive generation." Many statistics would be required to prove this to be true of the insane, and so also with regard to the transmission of the disorder to one sex only, or to offspring of the opposite sex only.

Passing over some other propositions we come to the second law of heredity, which Mercier calls the law of the limited dissimilarity of parents. "There are certain limits, on the one hand of similarity and on the other of dissimilarity, between two individuals, between which limits only can the union of the two be fertile; and in proportion as these limits are approached, the offspring deteriorates in organization."

Under the head of similarity he discusses the marriage of cousins. "If two brothers inherit strongly the characters of one of their parents, and if each transmits these qualities prepotently to his children, the cousins thus produced will have not only a close relationship of blood but a close similarity of physiological characters, and if they marry, their offspring will be likely to be imperfect. If, however, of two brothers one inherits strongly the characters of the father and the other exhibits a strong reversion to the maternal great-grandfather, and if the children of one brother inherit mainly from the father while the qualities of the mother are prepotent in the children of the other, it is evident that although the blood relationship is as near as in the former cousins, yet since these cousins have a considerable physiological dissimilarity, their offspring will be likely to be well developed. In this reasoning we find an explanation of the varying conclusions of those who have studied the marriage of near kin. It is admitted by breeders of animals that it is the effect of

continued in-breeding that is detrimental, and the union of a pair of cousins would not come under this description."

Mercier sums up the question of the marriage of first cousins as follows:[9] "The first consideration is whether in the family common to both cousins there is an inheritance of insanity. If there be, and if the inheritance is from a near ancestor—if, for instance, it is from one of the common grandparents—the union should under almost all circumstances be forbidden. If there is no inheritance of insanity in the common family, but near inheritance in each of the separate families, the union should be forbidden. If there is no inheritance in the common family and near inheritance in one only of the separate families, the kinship alone need be no bar to marriage."

A certain similarity or suitability is necessary for the production of well-organized offspring. There must be kinship but not too close kinship. On the other hand too great dissimilarity has its disadvantages. The development of cross-bred offspring is rapid, but it shares the defect of all rapid growth in the result being unstable. "If a higher stage of development is attained so that the superior nerve regions reach a greater complexity and elaborateness of structure, this greater complexity and elaborateness carries with it a greater obnoxiousness to disordering influences, a greater liability to become disordered; and when this more complex structure is developed at a more rapid rate, the tendency of the structure so formed to fall into disorder becomes additionally pronounced. Hence we find that the offspring of somewhat too dissimilar parents develop rapidly, attain early to a high degree of intelligence, and are prone to disorder of the structures last developed—the highest nerve regions." The effects of crossing highly civilized men with women of lower races has been noted by Darwin, who speaks of the degraded state and savage disposition of crossed races of man. Residents in the West Indies and elsewhere have told me of the peculiar mental characteristics of the "brown" man, the offspring of Europeans and blacks. I myself have known a family, the children of a gentleman and a gypsy girl, several members of which have been insane; it will in all probability become extinct.

It is said with truth that in a family saturated with insanity the tendency is either to extinction or to throw off the taint of the mental disorder by the admission into it of healthy blood. The latter, however, may take a long time owing to the phenomena of reversion. A parent who has suffered from insanity or some other neurotic disorder may transmit this to his children or some of them. Some may escape, but if they mate with wives who are not themselves of a stable nature, their children will in all probability show some form

of nervous defect. The latency of insanity is ever to be borne in mind when the marriage of any one is discussed whose family has contained examples of the disorder, especially if these have occurred at an early period of life. We are constantly consulted about the marrying of such individuals, not cousins, but persons in whose family insanity exists or who have themselves had attacks. This subject will be considered later, as also the prognosis in the cases in which the insanity is hereditary. At present it is to be remembered that there is a tendency to insanity in members of a family where it exists, even if it has not appeared in either the father or mother of the individual. This is due to *latency*, or *reversion*, or *atavism*—important laws which are apt to be overlooked by those who wish to ignore the taint. As for the transmission from father to sons, or father to daughters, or mother to sons or daughters, we have not statistics at our command to lay down any law on the subject. It sometimes happens that in one family the sons are the sufferers, in another the daughters, but then in others we find some of both sexes breaking down. The outcome of all our investigation is that where there is the tendency, the utmost care should be taken that the union, if any, should be with a healthy and stable partner, one not closely akin, and, on the other hand, not too widely dissimilar. In this way the health and prosperity of the offspring may best be promoted.

Heredity is one of a number of *tendencies* to insanity, or, as they were formerly called, *predisposing causes*. Some other tendencies must now be mentioned.

The Insane Diathesis or Temperament.—Following close upon the study of heredity comes that of the insane diathesis or temperament which has been recognized by many authors. The people who may be described under this head are many in number and very various in character. Among them are all who are denominated "cranks" or eccentrics, differing much from the average members of society and badly adjusted to their surroundings, not so completely out of harmony as to require restraint, but always on the verge of becoming so. They form the large class of borderland cases with whom we are constantly coming in contact and are extremely difficult to treat and bring into harmony with the surroundings of ordinary life. It has been said that this diathesis may be inherited or acquired, and it is true that certain habits, such as drinking, may give rise to peculiar conduct and an impaired mental state; but even here it is always a question whether the drinking habit tself may not have been inherited, either directly from drinking parents or as a neurosis derived from ancestors who suffered from some other neurotic disorder, such as insanity or epilepsy. This temperament may be easily studied in

the characters of the relatives of the insane patients under our care. They are not insane but are peculiar and eccentric. In the fathers and mothers, the brothers and sisters of our patients we may detect the origin or affinity of the symptoms which the latter display. Even the bodily traits, tricks, and contortions are reproduced. A patient of mine had most odd tricks of touching everything with his hands. His father reproduced these or some of them almost identically. The father was never insane but eccentric and a double-first classman. The son was an idiot and another son became insane and died of what may be called pseudo-general paralysis. These eccentrics display conspicuously the predominance of egoistic, or self or subject consciousness, which is seen throughout all who are insane or verging towards insanity. Such egoism is the outcome of a defective mental organization. We recognize it as a sign of approaching insanity when it appears in an individual who has hitherto been free from it, and when we meet with it in these borderland and eccentric individuals we recognize it as a part of their constitutional infirmity.

This egoism or selfishness is exhibited in various ways. It may be mere penuriousness, a desire to accumulate wealth; many devote their lives to this and this alone; their one thought is to get rich and to be richer than their neighbors, and if anything goes wrong, and instead of a profit they make a loss, they take it to heart and deplore their misfortune as if it were utter ruin. Others think to get rich by stinting themselves and those about them in every conceivable way; they will hardly allow their wives and families sufficient for food or clothing, and if they are single, will deny themselves the necessaries of life. Others are characterized by constant suspicion of everything and every one; they suspect their friends, their clergyman, their medical attendant; they go from medical man to medical man trying to test the opinion of one by that of another; they listen to every tale that is told them by servants or to all the gossip of a village, and embitter their lives by suspicious fancies. One lady whom I knew well indulged these suspicions till at last she accused her visitors of stealing things from her drawing-room, so that none would go near her. Gradually she developed undoubted insanity, heard "voices," and died in an asylum. Akin to this is the jealousy which makes the lives of many a constant misery; even among the young it is one of the manifestations of intense egoism; their friends must have no other friends, and they are jealous if any one comes between their special comrades and themselves. In after-life, and especially married life, incredible jealousy is to be found even in those who are reputed sane. Men and women think their wives or husbands are running after others or looking at others, even perfect strangers,

without there being the faintest ground for such suspicion; many a home is thus rendered miserable and the step towards insanity is not a long one, though such insanity is often difficult to certify. Then, too, there are various forms of fear, fear that some one is going to do them an injury, or that something is going to happen to them, and these fears easily grow into delusions. Another form of fear is hypochondria which often merges into insanity. Some think of nothing but health, and are so wrapped up in the task of taking care of it that they do nothing else and neglect business and family in the vain search for remedies for their imaginary ailments. One gentleman I knew who at last would not sign the checks necessary for his daily wants and by his own wish all his affairs were taken out of his hands. These are various degrees and shades of that morbid self-consciousness which constitutes another of the tendencies to insanity.

Sex.—What has the sex of the patient to do with the chance of insanity showing itself? Do more men or women become insane? It is a question not easy to answer and one where statistics are apt to mislead. That females preponderate in our own asylums is certain. In the report for the year 1896 the commissioners give as the number of the officially known lunatics in England and Wales 52,508 females and 43,938 males, and there were admitted into the private, pauper, and criminal asylums during the year 1895, 9,600 females and 9,194 males. These figures are not, however, conclusive. In every asylum there is a larger number of females and an ever-increasing accumulation owing to the lesser mortality. They are much less liable to fatal brain disease; they suffer in far less degree from general paralysis, and also from apoplexy, hemiplegia, and other forms of brain degeneration. Many sink into quiet dementia and in this state live a long life. In most asylums the octogenarian women outnumber the men. Only the statistics of new cases can determine the question with accuracy, and the numbers of those admitted have to be compared with those of our male and female population at the same time. In the year 1895 the ratio of admissions compared with the entire population was of females 6.06 and of males 6.11 per 10,000. Of course many are omitted; in the well-to-do classes a large number of females are kept out of asylums and recover without being registered, especially those who break down after parturition, many of whom recover at home. Against these may be set the large number of males who suffer from general paralysis and are constantly being admitted into asylums, not to live and add to the chronic residue, but to die and be replaced by others. My own belief is that the difference in the number of the two sexes who become insane is not very material. It is quite true that women's nervous condition is one of greater instability

and they are liable to be upset by sexual troubles and such changes as are brought about by puberty, pregnancy, parturition, and lactation, but from the insanity thus caused a large number recover to break down again and thus to swell the numbers registered, not being, however, new cases.

What has marriage to do with the question of a tendency to insanity? According to the commissioners' tables for the five years 1888 to 1892, there were admitted into asylums 3,480 single males and 3,399 single females; of the married 3,559 were males and 3,543 females, while of the widowed 6.70 per cent. were males and 12.69 per cent. females. These are the total numbers which of the single and married approach each other tolerably closely. If we look at the numbers admitted at different ages we shall see that from 15 up to 34 years the number of married females exceeds that of the married males, being 1,097 to 618. But taking the statistics of the entire population we find the same thing, namely, that below the age of 34 the married females predominate, above that age there are more married males.

Age.—In a subsequent section I shall have to describe the varieties of insanity which occur at the different periods of life, the time of puberty, of adolescence, at the climacteric, and in old age. Here we have only to consider whether the age has anything to do with the incursion of mental disorder or the exemption from it, whether there is a tendency at one time of life rather than at the others. For this statistics must be consulted and the information to be gained from them is extremely valuable.

Looking at the tables in the same report of the commissioners we find that in the five years 1888 to 1892, the numbers admitted gradually increased as the age increased up to that of 34 years. Under the age of 15 there were only 323. Between the ages of 15 and 19, 835. Between 20 and 24 there were 1,520. Between 25 and 34, a period of ten years, there were 3,701, while in the next decade (35 to 44) there were 3,609, and afterwards the numbers decline in each successive decade. But comparing the numbers admitted with those of the entire population at the same periods of age, we find that the highest ratio, 11.3, is of those admitted between the ages of 45 to 54. These figures, however, are not to be relied upon as absolutely accurate. They do not take into account all the cases of recurrent insanity which are registered over and over again as if they were new admissions. Neither do they inform us as to the age of the patients when the insanity commenced. Many are not admitted into asylums till long after the date when the first symptoms were noticed, and this specially applies to private patients whose friends have tried

every plan before resorting to an asylum and registration. From every side the figures show that which may be inferred from *a priori* reasoning, that it is not at the time of puberty, great as is the change, nor in adolescence, nor in the decline of the climacteric or old age that people have the greatest tendency to become insane, but, as Dr. Thurnam long ago stated:[10] "The period of life most liable to insanity is that of maturity, or from twenty to fifty or sixty years of age. From thirty to forty years of age the liability is usually the greatest; and it decreases with each succeeding decennial period, the decrease being gradual from thirty to sixty years, and after that much more rapid." Dr. Thurnam's statistics were very carefully compiled and it is possible that they are more correct than the general mass of admissions contained in the commissioners' report. We may take it that the time of the highest development and specialization of the brain centres is that when they are most prone to disorder, the time when an inherited weakness is most likely to assert itself, and when the last and least organized structures are most liable to disturbance and loss of equilibrium.

Civilization as a Tendency to Insanity.—As the time of the highest development in the individual is, as we have seen, that at which he is most prone to become insane, so the most highly developed and specialized among civilized nations will be those in whom mental disease will be most commonly met with. The most lowly developed and savage races of the earth do not keep statistics of the insanity which is among them, but we may be quite sure that in a primitive people who have not been corrupted by the alcohol or syphilis of civilization, insanity will hardly exist, and any idiocy will probably be due to accidents at birth or in early childhood. In such a community the mental state is childlike and undeveloped; the feelings and emotions are of the simplest kind, fear, joy, and grief, not profound nor enduring. Of complicated emotions, ambition, disappointment, pride, intellectual success, religious fanaticism, they know nothing. Their lives are not spent in the amassing of wealth or speculation, and as they do not make fortunes, so they do not lose them. Their bodily wants are few and their lives healthy. There can be no insanity here. In the older civilizations, in China, India, or Japan, there is more, but still little compared with that which is found in western Europe. In China there is no provision for the insane, from which we may infer that there are but few. Dr. Wise[11] attributes the rarity of insanity among the Chinese to their regular manner of life and temperate habits. It is true that they smoke opium, but in spite of all the exaggerated tales of the Anti-Opium Society it is doubtful if they derive the slightest harm from so doing. They drink not al-

cohol but tea, and their food is chiefly rice. Not long ago I was called to the Chinese Embassy to see a commissioner who was in a state of melancholia and reproduced in a wonderful way all the delusions heard every day in our own country from melancholic patients. Under treatment he got so much better that it was proposed to send him home. He was so frightened at the idea of dying at sea and not being buried with his ancestors, that he procured a friend's lump of opium and committed suicide. This gentleman was one of the most highly educated of his day, and had passed all the innumerable examinations of the Chinese; in consequence of his superior attainments he had been sent to England as a commissioner to report on various matters, and the responsibility of this and his long study seem to have been too much for him.

China, India, and Japan are countries whose civilization is of great antiquity, and may be said to hold an intermediate place between the European and that of barbarous tribes. It has been a civilization of very slow development and little change, and therefore has made little demand upon the brain centres of the people. Education in all has existed for ages, but has not extended to the many. The religions, whether of Buddha, Brahma, or Mahomet, have existed without great spiritual excitement, and the lives of the multitude have been simple and healthy. In India the insanity most frequently found is the intoxication of gungah or Indian hemp; otherwise "the Indians in their mosaic offer to us a still unexhausted preserve of primitive psychical life, a mine for those who study folklore, but have not as yet developed true endemic insanity, although we witness endemics of spiritualism, chivalry, and caste, which are influenced by preponderating religious coloring." [12]

In Japan it is probable that the development of civilization and the introduction of advanced ideas and, it is to be feared, the vices of Western nations, will bring about an increase of insanity. The same may be seen among the African negroes in the United States and West Indies. Dr. Bucke[13] tells us that "at the time of the United States census of 1880 among 43,000,000 white people there were 86,000 insane—exactly 1 in 500—while among 6,750,000 negroes, only a little more than 6,000 were insane, a proportion of only about 1 to 1,100." It is to be feared, however, that both there and in the West Indies insanity is increasing among the negro population under the influences of alcohol, syphilis, and religious excitement.

Recurrence.—Among the tendencies which affect those who have already had an attack of insanity must be enumerated the liability to recurrence, which is so constantly brought under our notice. In the commissioners' table of "causes," they give among the physical

causes "previous attacks." It is right that such attacks should be registered, and although they can only be said in a partial sense to be "causes," they often throw much light on the history of the case and are the only assignable cause of the subsequent disorder. That insanity is liable to recur is acknowledged by all. Dr. Thurnam, from statistics founded on the patients in the York Retreat—the asylum belonging to the Society of Friends—states that of 244 cases followed through life 131 recovered from the first attack, but of these only 45 remained permanently sane; 86 had subsequent attacks and 66 died insane. When a man or woman has once been insane, there is a great liability to a recurrence of the malady. We see some in whom the recurrence is frequent. A young lady now under care has had four attacks in eight years. A lady just seen by me had an attack when twenty-seven years of age, and no other till she was fifty and undergoing the change of life.

Exciting Causes.

The tendencies to insanity are, as I have said, frequently called the "predisposing causes," and in contradistinction to these are the "exciting causes," as they are termed, which bring about the particular attack in each individual. A man may be by inheritance prone to insanity, of an insane temperament, highly educated and specialized, and of an age liable to the disease; some slight event upsets his unstable equilibrium, and brings about a pathological condition of his brain centres; but inasmuch as there must have been insanity before it could have been inherited, there must have been pathological conditions which, acquired from outside, left a permanent blemish on the brain centres which was transmitted to the offspring. Some of these origins of damage to the brain cortex must now be examined.

Insanity from Overstrain.

In his Morisonian lectures (1894) Dr. Batty Tuke has closely examined the mental disorder produced by overstrain and has brought to bear on the question the observations and experiments of many authors. From Mosso and others he adduces the fact that hyperæmia of the superior surface of the brain occurs in direct relation to psychical activity, though it is still doubtful how this functional hyperæmia is produced—whether by reflex inhibition of the vasoconstrictor centre, by direct action of vasodilator fibres, or by a combination of the action of the two systems. As to this, something has already been said (p. 6). Roy and Sherrington introduced acids and acid brain fil-

trates into the cerebral circulation, and found that hyperæmia was the consequence. They came to the conclusion that "the chemical products of cerebral metabolism contained in the lymph which bathes the walls of the arterioles of the brain can cause variations of the calibre of the cerebral vessels; that in this reaction the brain possesses an intrinsic mechanism by which its vascular supply can be varied locally in correspondence with local variations of functional activity." "

Other observers have established the fact of the alkaline reaction of normal brain tissue and the rapid production of acidity under abnormal conditions, such as the interruption of blood current by pressure on the carotids, and Dr. Milne Murray has demonstrated the rise of temperature incident on chemical changes produced by psychical activity. Moreover, Mosso has shown that fatigue caused by psychical action produces not only a poisonous effect on the general system, especially the muscular, of the person experimented on, but also has proved that blood taken from an exhausted animal and injected into the circulation of one at rest causes indications of extreme fatigue.

Dr. Batty Tuke next adduces the experiments of Dr. Hodge on the effects of electrical stimulation on the spinal ganglion cells of frogs and certain warm-blooded animals, and on the effect of normal fatigue on the cerebral cells of the sparrow, pigeon, swallow, and honey-bee. He found by examination of the cells after stimulation, or after the day's normal fatigue, that there is a marked decrease in size—a change from a smooth and rounded to a jagged, irregular outline, and a loss of the open, reticulated appearance with a tendency to take on darker stains than the nucleus of the resting cell; that in cell protoplasm there is a slight shrinking in size with vacuolation in the cells of the spinal ganglia, and in the cerebral cells a considerable shrinkage with enlargement of the pericellular lymph space of the cells of the cerebrum and cerebellum, and decreased power of taking on stains. The nucleus then becomes darker, deformed, and crenated, both it and the protoplasm lose all power of taking on stains, and the state is one of collapse.

From all these experiments and from the analogy of morbid processes in the kidney and liver, Dr. Tuke conjectures that the morbid condition of the brain is thus produced: "Continuous or frequently recurring excitation or irritation calls for an increase of blood; the function of the vasomotor nerves becomes overstrained; the consequent dilatation of the vessels is maintained by the lessened alkalinity of the cerebrospinal fluid, and the discharge of energy of the cells becomes irregular in consequence of the presence of more blood than is needed for repair, and the discharge takes place at a low level

of cell nutrition and function. If this state persists, the result is active hyperæmia, passive hyperæmia, and congestion. A subinflammatory condition is reached, evidenced by deposits of leucocytes much greater than normal between the hyaline membrane and the muscular coat, by red corpuscles in various stages of degradation, by large masses of pigment, by proliferation of the fixed connective-tissue cells of the vessel, and by exudation."

Concurrently with the hyperæmia there is, says Dr. Tuke, implication of the important functions of the lymphatic system; even slight pathological changes, especially at the vertex, must interfere with the vascular unity of the cerebrum, if they impede the removal of lymph fluid. Continued upward pressure must dam back the fluid by interfering with the patency of the pial conduits, the only relief being found in the action of the Pacchionian villi. Hence in chronic insanity these are commonly found much hypertrophied. Obstruction to the outward flow may also result from the deposit of débris produced by the breaking down of leucocytes, endothelium, and deposits of blood pigment which are apt to collect in the perivascular lymph-space. The drainage being thus obstructed, the cells are subjected to the action of a fluid which is not only as to reaction in an unphysiological condition, but is also loaded with the products of waste.

Such results of congestion are, in Dr. Tuke's opinion, the cause of the early symptoms of the insanity which is commonly known as idiopathic, and is said to be due to *moral causes.*

In a large number of cases the initial symptoms are insidious in character, and physical phenomena are the first to present themselves. These consist of a feeling of fulness or uneasiness of the head, or a dull heavy pain in the occiput or in the frontal region extending to the vertex. There is a general feeling of malaise, the pulse is irritable, not much increased in rapidity, but fuller than normal, and it may gain so much in volume as to assume a "cerebral" character. The first heart sound is often accentuated, the temperature rises slightly at night, the general system becomes impaired, there is disturbance of the digestive organs, and the nutrition of the body suffers. Oxalates or phosphates are usually present in the urine, and in women menstruation is affected. The mental symptoms follow closely. They consist in anxiety, restlessness, irritability, inability to apply the mind to the ordinary affairs of life, a strong tendency to introspection and concentration on self, and sleeplessness. Up to this point it is rarely possible to predict whether the case will culminate in acute mania or acute melancholia. They are both states of excitement of feeling and loss of control, and both may have their origin in the same pathological causation. The naked-eye evidence of mor-

bid action is focussed around the so-called sensory-motor area. In the very large majority of all persons dying insane we find the milky opacity of the arachno- and visceral pia, which is closely associated with underlying morbid processes, present in a space which can be covered by the two hands placed together, the lower ends of the hypothenar eminences covering the spot where the fissures of Rolando meet. Probably the cells in this region are the first to meet with morbid exudates, and restlessness is the indication of the impairment of their activity. The giant pyramidal cells are the first to show marked altered structure, and for this reason we may infer that concurrently with the advance of pathological events in them, what was at first mere restlessness waxes into the excited condition of acute mania or acute melancholia.

It is easy to comprehend that long-continued strain, the strain of overwork or overworry, a long striving after some much-desired object with disappointment at last, will damage the nerve cells just as normal fatigue altered those of Dr. Hodge's animals, disturbing the cerebral circulation or clogging it with products of waste. In this way we convert into physical causes five out of the six moral causes as given in the report of the commissioners in lunacy. The sixth in the list is "fright or shock." This is a cause of a different kind and will include all events which occurring suddenly upset the mental equilibrium. It may be fright at some sight, as a sudden fatal accident, or an accident happening to the individual, perhaps not serious, but causing a sudden shock. It may be a sudden piece of bad news, or something which will effect a total change in the position and environment of the patient. Any of these events may bring about a change in the brain centres and circulation not less extensive than that produced by long-continued work or worry.

We are very apt to think that organic lesion is the cause of mental derangement, and so overlook the fact that mind trouble may cause organic lesion. In the *Journal of Mental Science* (Vol. XII., p. 352) I recorded the case of a healthy young woman, aged twenty-four, who one day met her sweetheart at the British Museum walking with another girl; a violent scene ensued, the young man tearing a brooch with his portrait out of her shawl. Next day she fretted much, and the following day was maniacal. She then fell into a state of stupor and was admitted into a hospital on the fifth day after the quarrel. "She evidently heard and saw, but all the mental faculties were suppressed. No paralysis. She was noisy all night. Next day she was delirious, constantly talking, not answering when spoken to. On the third day after admission she suddenly became comatose and died. In the left hemisphere was found a very large recent clot,

estimated to weigh at least an ounce." Here such a strain is put on the cerebral circulation that a vessel actually gives way in a healthy young woman of twenty-four.

Shock or fright may produce rapid results as in the case just mentioned. On the other hand, though the shock may be sudden, the consequences may be long delayed, and then we have a condition allied to that produced by long-continued worry. The patient's mind is continually brooding over that which has happened, sleep is broken, and gradually the damage thus done to the cerebral centres makes itself seen. When the brain is rapidly reduced, very acute symptoms are liable to follow. "The peculiarity of the exciting cause appears to be not its psychological characteristics, but its intensity and rapidity of incidence, the latter depending not only on the former, but also on the stability or instability of tissue. According as excitement of feeling is rapidly produced, so the more likely is mania to be the symptom occurring in consequence of the action of abnormal arterial hyperæmia and its immediate consequences" (Batty Tuke).

There is a long series of cases contained in the works of foreign authors which may be called "traumatic hysteria" or "traumatic neurasthenia," the result of railway collisions or other accidents. The symptoms, however, are hardly those of insanity, nor do the patients require to be treated as insane.

Sexual Excess and Self-Abuse.

In the commissioners' last report the average number of patients whose insanity was assigned to these two causes was of males 257, and of females 75 out of a total of 8,289 male and 8,797 female patients. Whereby we learn that such excess is far more prejudicial to men than to women, the cases assigned to it as the cause being much more numerous among the males. It is a difficult cause to investigate with anything like accuracy, as that which is excess in one may have little effect in another. In a weakly individual with an unstable nerve organization, the constant excitation of sexual orgasm, whether in the shape of self-abuse or copulation, must have a damaging effect on the brain, producing in all probability the same result upon the nerve cell as fatigue or overstimulation. I have known epilepsy follow the indulgence of a newly married man and disappear under proper restriction. This pointed to an explosive condition of the centres, a condition of greater instability than that of the man in whom mental disturbance only is produced. These cases may fitly be ranged under the section of insanity from overstrain.

Insanity from Physical Causes.

Insanity from Epilepsy.

The connection between epilepsy and mental disorder is of great consequence and has been carefully studied by many physicians; especially I would refer to the writings of Hughlings Jackson in the West Riding Asylum reports, Vol. III., and other journals. Epilepsy, like alcoholism, may occur without causing any appreciable mental disturbance. As a man who has been very drunk becomes perfectly sane when sober, so another may have an epileptic fit and after a sleep wake sane. Like alcoholism, epilepsy may produce in time mental enfeeblement and dementia; loss of memory will be a prominent symptom in both, with inability to fix the thoughts on a subject, or execute anything requiring application and attention. But, also like alcohol, epilepsy may give rise to insane reductions, to melancholic depression, to wild attacks of mania, to delusions and hallucinations or to alterations of the moral conduct and habits of the patient. The varieties of the symptoms are endless, and it is very evident from this fact that the seat of the primary discharge from the cortex must vary also. As Dr. Jackson says, "From this it follows that there is, scientifically speaking, no entity to be called epilepsy, but innumerable different epilepsies as there are innumerable seats of discharging lesions. And as the first symptom in the paroxysm is the first effect of the discharge of the unstable centre, any two paroxysms beginning differently will differ throughout, however little." A mental change will be observed in many epileptics prior to a fit or succession of fits. This change may be marked by some delusion or hallucination, by a failure of mental power and inability to follow an occupation, by great depression of spirits or the reverse, exaltation and excitement, and often there is great irritability or ill-temper. On the other hand, I have known patients who seemed at their best just before an attack, with minds clearer and more capable than at any other time.

The attack itself may be ushered in by auræ of the special senses, of the visceral or organic sensations, or intellectual or psychical auræ, and the epileptic attack will differ according to the severity of the motor or the mental implication. After the paroxysm we find an endless variety of mental disturbances, all depending on the portion of the cortex which is discharged. Sometimes it happens that very violent maniacal excitement will follow even one slight attack of *petit mal*, an attack which the friends have overlooked or know nothing about. The so-called nocturnal epilepsy is of this kind, and may exist

for a long time without being suspected if the individual sleeps alone, for of such fits, whether they be *grand mal* or *petit mal*, he is quite unconscious. Possibly attention may be drawn thereto by a bitten tongue or a wet bed, but often nothing is known and wild excitement will follow one of these attacks without its cause being recognized. It is well known that the recurrence of the slight attacks of *petit mal* are more likely to impair the mental condition than the severe paroxysms, and in my experience they are harder to cure.

In a patient insane from epilepsy it is usual for a fit or succession of fits to be followed by an attack of maniacal excitement, which may be of all kinds the most dangerous and furious. This mania continues for a varying time, and then passes off, leaving the patient much as he was before, but recurring with each attack. Such people require the care of an asylum, but it sometimes happens that if the paroxysms are not frequent, the mind may be so far restored that a question arises whether they can legally be kept longer in restraint. This is a difficult point, and must be decided by our knowledge of the interval between the attacks and the nature of the maniacal excitement or violence which succeeds. We must be guided also by the prospect of the care or want of care which the patient is likely to have when he leaves the asylum. If the fits cease altogether, the mental health may be restored, even after many years. Dr. Whitcombe relates[15] the case of a woman who had had fits since she was nine years old and was admitted into an asylum at the age of thirty in a "state of total imbecility, unconscious of everything and every person about her." Twelve years afterwards she suffered from an attack of acute rheumatism, followed by chronic rheumatic arthritis, for which the left leg was amputated. At the time of the acute attack the fits ceased, and three years after "she was bright, cheerful, and happy, rational in conversation and constantly employed."

From the observations of Hughlings Jackson on the epileptic discharges we turn to the pathological researches of Bevan Lewis. "The morbid histology," he says, "is confessedly an obscure question if we confine our attention to those seizures in which coarse brain disease and naked-eye changes are not appreciable. There exists a widespread community of opinion that the pathological anatomy of epilepsy, whatever it be, is the expression of a grave nutritional disturbance of cell protoplasm, a nutritive disturbance which need not express itself in palpable morbid change even to the higher powers of the microscope. From this opinion, however, we must dissent; for it appears to us that a morbid appearance of the cortical cell does exist of a highly characteristic nature when the cortex is the subject of careful examination by the *fresh method* of research.

"The essential nature of epilepsy is that of an abnormal discharge of nerve force from the higher cerebral centres in the cortex. A nutritive irritability underlies the morbid activity, and invariably expresses itself in some one or other morbid change recognizable in the structural elements of the cortex. In cases of epilepsy in which mental disturbance predominates and actual insanity coexists, we have a notable affection of a special series of cells, not exclusively seen, however, in this disease, for it prevails likewise in other convulsive affections such as chronic alcoholism, wherein spasmodic discharges of nerve energy are frequent." This consists of changes in the small nerve cells of the second layer of the cortex commencing in the nucleus.

Alcoholic Insanity.

That alcohol plays an important part in the causation of insanity, even at the present day, is, unfortunately, certain. In our own country its effects are to be studied among the lower classes, or the males of the lower classes, rather than among the higher; but in the latter there are still plenty of examples, both male and female. The two sexes are not affected in the same manner. Acute alcoholism in the shape of delirium tremens is rarely found in women, who have a comparative immunity from this as from general paralysis. We can study the effect of alcohol from the heightened circulation, rapid talking, and increased vivacity of the man who has had a moderate amount of wine to the symptoms of poisoning, the tottering gait, thickened speech and incoherent ideas of him who has had too much. It is a common remark that every symptom of insanity may be produced by drink. Some men when drunk are maudlin and melancholic, some are furious and may commit homicide or suicide. The effect of acute drinking is to produce in many the delirium which we call *delirium tremens*, which may abound in delusions and hallucinations of sight and hearing, with great tremor of the limbs, almost amounting to palsy, but which subsides when the poison is eliminated, the patient recovering in a week or so and being entirely restored to health in mind and body. If such attacks are not very frequent, a man may have them during a period of many years without permanent damage. But there are two other forms of acute alcoholism. Some men are for the time mad-drunk and may in this state be very dangerous to themselves or others. This state is not delirium tremens, and it will subside in twenty-four hours if drink is entirely stopped. And there is also an acute or acute delirious mania which is more prolonged than delirium tremens and has not the tremor. This, too, will pass away if alcohol is withheld, though a longer time may be required. Treatment at home rather than removal to an asy-

lum should be tried in all these forms, if it is possible to carry it out with safety. The very acute symptoms are generally of brief duration and subsequent measures can be adopted if necessary.

Chronic alcoholization produces mental disorders of various kinds, ranging from mere alteration of conduct and troublesome or vicious behavior to the most complete dementia with total loss of memory and extinction of mind. The diagnosis of the first is often extremely difficult. We may be certain that the individual is altered and altered for the worse, but may have doubts whether the alteration amounts to insanity for which he should be restrained in an asylum, though at present owing to our defective legislation we have no other mode of compulsory detention. Some rapidly recover when drink is withheld, and this adds to our difficulty, because when a man is placed in an asylum and beyond the reach of drink, the insanity of conduct is not apparent. There is mental improvement on the one hand, and no opportunity of displaying such conduct on the other, so after a brief sojourn the patient comes out to return to his drink and quarrel with all his friends. Alcohol produces in others much more marked insanity, delusions of every kind, delusions of persecution, conspiracy and suspicion, and not only delusions but hallucinations of hearing, taste, and smell, visceral hallucinations and perverted sexual feelings and instincts. Such patients may be as dangerous as any class, both homicidal and suicidal. Their brain is damaged by the long-continued drink and does not recover, as a more healthy organ may be expected to do. Sensorial and motor troubles give rise to delusions concerning the body and fancies of electrical wires and machines. Tingling and pricking sensations cause ideas of insects crawling on the skin, or snakes gliding over the limbs, while motor difficulties bring about corresponding beliefs that the patient is practised upon by unseen persons or some mysterious agency which has taken away the power from his legs and weakened him everywhere.

This delusional insanity is much more common in men than in women, the symptoms produced in the latter by continued drinking being in very many cases sudden loss of memory. I have known this come on in twenty-four hours in a woman who had been for years a hard drinker without becoming absolutely drunk. Every degree of forgetfulness will be found, recent matters, names, dates, and events passing away almost immediately. Here we have the nerve centres damaged and changed by the long-continued poisoning; the nerve cells and fibres are degenerate and inefficient. Patients are often quite conscious of the defect, and appeal to those about them for the answer to our questions or beg us not to ask them. Total abstinence, rest, and food may restore the memory to a considerable extent,

though it is doubtful if the mental powers are ever quite the same. It may, however, be so far restored that a question may be raised as to the legal capacity or incapacity of the individual, and either the one or the other may be difficult to prove. The power of recollecting will vary much from day to day, and even according to the hour of the day; and if the patient is tested not as to current events, but as to what happened years ago, he may acquit himself very creditably and his forgetfulness of the present may be minimized.

Another constant symptom, also depending on the degenerate condition of the cortex, is a loss of motor power, which, as Bevan Lewis says, is not incoördination or ataxia, but commences with a fine muscular tremor affecting first the fingers and hands and spreading up the arm, then involving the tongue, lips, and articulatory muscles, and lastly extending to the foot and legs.[16] Muscular twitching of the face, tongue, or head will also be noticed, and muscular spasms and cramps and epileptic or epileptiform convulsions with a certain amount of paralysis not infrequently appear in the course of the drinking. All this will be alleviated if drink is withheld, and recovery will ensue to a wonderful extent. I have known a lady admitted to an asylum with the most complete paralysis of the lower extremities and sphincters and equally complete amnesia. She walked out of the institution in a comparatively short time restored in mind and body. Needless to say, she went back to her former habits, and in the next attack she died.

Andriezen has very carefully analyzed[17] the clinical symptoms of this insanity and has compared them with the pathological changes discovered by him in the brain tissues of alcoholic patients. He divides the symptoms into seven main groups. (1) The first is a diminished power of recollection—of recalling past memories of things seen or heard, such power implying a highly evolved cortical organization and the integrity of the latest evolved and elaborated anatomico-physiological connections between the nerve cells in the nutrition of each individual cell. He describes both external and internal changes in the fibrils which form the conjunction between the nerve cells. They become granular and wrinkled in outline instead of being fine, delicate, and smooth, and internally are streaked and irregular when stained, indicating chemical changes. Commencing trophic changes in the cell bodies are also noticed, pointing to increased functional activity, which is productive of a degradation and increase of pigmentation, the replacement of living protoplasm by non-living pigmentary product. (2) The next symptom is a diminished faculty of attention and volition. This is a more advanced defect; even when the objective images are present, the capacity of receiving and regis-

tering them in the mind is diminished. "Volition is a development from attention and passes on to execution, being thus the passing from attention to execution; in the brain it overlaps the psychomotor sphere on the one side, and the sensory on the other; its region is, therefore, the transitional or association system between the two." And the pathology of this defect is, according to Andriezen, a commencing nutritive degradation of the nerve cells which discharge down the pyramidal tract, inciting thereby the motor cells of the cord. (3) As the result of the above-mentioned changes we find diminished initiativeness and energy in conduct, and (4) diminished muscular power, trembling, together with (5) a blunting of the higher moral and ethical sense. (6) We also have insomnia, a loss of capacity for sleep and recuperation. Here we may apply that which has been already said concerning the effects of fatigue on the brain cells as evidenced by the experiments of Hodge and the researches of Batty Tuke and of Mann, the latter proving beyond a doubt that a series of changes are present parallel to those described by Hodge.

Finally, we come to the seventh stage. (7) Melancholia with suspicion, vague dreads mixed with phases of momentary excitement, and finally with acute hallucinations and delusions, maniacal excitement, delirious conditions and epileptic fits, from which, if relief is obtained, a permanent residuum of weak-mindedness is left behind, or chronic mania or systematized delusional insanity. The earliest in this group is melancholia, with vague and general suspicions, intensified at moments by distinct hallucinations of the senses. This, the seventh stage, is one of bad omen. It indicates not only a serious progress of the mischief beyond the limits of repair, but is often the beginning of a downward progressive stage. Pathologically, considerable extents of cortical tissue have by this time been damaged beyond recovery. There are points of softening and breaking up in the molecular and submolecular nerve protoplasmic plexuses, and a more notable involvement in the subpyramidal region, with pigmentary and fatty degeneration of nerve cells, and also a vascular disease, endoarteritis and fatty changes, narrowing of the lumen of the vessels with the sequelæ, imperfect nutrition of the brain tissues, thrombosis, and focal softening. There are also changes, softening and swellings, in the neuroglia elements themselves.

In studying the pathology of the insanity of alcoholism, it is to be remembered that recovery takes place at many stages of the disorder. There is the acute insanity often amounting to acute mania or acute delirium which arises as the result of a bout of heavy drinking, and occurs chiefly in men. In this, which we know as delirium tremens, the pathological condition must be closely allied to that of

the form of acute insanity just mentioned. The symptoms are quite different from the melancholia with suspicion, which characterizes chronic alcoholism, and they differ on the other hand from acute mania in that they commonly last only a few days, the whole disorder running its course in about a week and terminating in death or recovery in that period of time. It is manifest that this insanity is due to the action of the alcoholic poison upon the brain, but what are the structures or tissues affected thereby? The researches of Bevan Lewis, Andriezen, and others have been directed to the morbid anatomy of chronic alcoholism and the changes produced by long-continued drinking, but these are not the conditions of the brain in delirium tremens. In this disorder a patient is one day violently delirious with delusions and hallucinations of many kinds; he has had no sleep for days, and there is great fear that he will die. Yet sleep comes; either because the poison is eliminating or through the agency of drugs he sleeps many hours and awakes sane, every trace of the insanity having vanished. It is clear that some tissue of the brain is poisoned by the alcohol, and that when the latter is got rid of the brain function is restored. I recollect a very successful practitioner who used to treat delirium tremens by brisk purgation in order to get rid of the poison, and his patients certainly did well. The acute symptoms indicate here, as in acute delirium, active hyperæmia and excessive vascular action as evidenced by the total want of sleep, and it appears likely that the tissues paralyzed are the vasomotor which control the cerebral vessels; about them we at present know little, but they are probably the nerve cells themselves which regulate the blood supply of the cortex.

Insanity from other Poisons.

Indian Hemp, Hasheesh, or Bhang.—This is a fertile source of insanity in the East or wherever Orientals are gathered together. The drug is enjoyed in various ways, either by being smoked or taken into the stomach. When I was lately in the island of Trinidad, where there is a large coolie population, I found that none could be imported nor the plant grown under heavy penalties. The last report on the subject is from Dr. Warnock, the superintendent of the asylum at Cairo, who says that of 253 admissions in the latter half of 1895, 40 were put down to the abuse of hasheesh and 40 more to the combined effect of this drug and alcohol. Of 80 cases only 5 were women. In 41 per cent. of all his male patients hasheesh alone or combined with alcohol caused the disease, while this was the case in only 7 per cent. of the females. His conclusions on the subject are, first, that in quite a considerable number of cases hash-

eesh is the chief, if not the only cause of the mental disorder. Secondly, he does not think that hasheesh insanity can at present be diagnosed by its clinical characters alone. Many hasheesh patients recover almost immediately on their admission, an abstinence from the drug being in such cases followed by a cessation of the morbid symptoms. Dr. Warnock gives three types of this insanity: 1. Hasheesh intoxication—an elated, reckless state with optical hallucinations and delusions. Sometimes there is delirium, milder and less aggressive than that of alcohol, with none of the ataxic symptoms, recovery taking place in a day or two. 2. Acute mania with terrifying hallucinations, fear, continual restlessness and talking, sleeplessness and incoherence. These cases last some months and do not always recover. 3. Weakmindedness, with acute outbreaks after each hasheesh excess. They are quiet and well-behaved while under restraint, unconcerned and lazy. When discharged they return to the drug and come back in an acute state. In 1893–94 an "Indian Hemp Drug Commission" reported that of the whole number of cases admitted to asylums in India in 1892, only 7.3 per cent. were ascribed to hemp drugs, and in the opinion of this committee hemp drugs cause insanity more rarely than has popularly been supposed.

Opium.—That the excessive abuse of opium produces mental symptoms which amount to insanity is beyond question, yet it is not common, at any rate in this country. In the East opium is largely smoked and the growth of the poppy and sale of opium are the source of a never-ending controversy. In the West we have to deal not with the smoking of opium, but with the taking of morphine, either by the mouth or, what is now more common, subcutaneous injection. In many cases this amounts to a veritable morphiomania, and the patients are reduced to a condition of great weakness of mind with complete loss of moral sense, so far as the habit is concerned. They become untruthful, artful, will deceive their friends and medical attendants, and will obtain the drug by any means, in this resembling the victims of alcoholic intoxication. In certain cases there may even be symptoms of insanity, delusions of persecution, mania with exaltation, mental weakness, and loss of memory. But such symptoms are rare even in morphine maniacs, and morphine may be taken for years and a habit engendered without the mind being seriously affected beyond the loss of *morale* already spoken of. The great difficulty in treating such people, which exists also in the case of the alcoholic, lies in the fact that the mind is not so impaired as to constitute legal insanity; consequently they cannot be secluded and restrained under the complete control which alone gives us a chance of reforming them and breaking the habit. I have known a patient who

used the hypodermic syringe for years, and eventually died of the results of morphine, yet beyond the loss of *morale* as regards this he presented at no time any mental symptoms. The effects of opium-smoking also are greatly exaggerated. Competent observers tell us that the victims of it such as we read of in sensational novels are only the exceptions, and that in China opium is smoked in moderation by thousands who are hale and hearty and enjoy excellent health. There is an immense difference between the results of the continual use of opium and alcohol. The various methods of treatment of morphiomania are by sudden, quick, or slow deprivation. Sudden deprivation I look upon as dangerous, for it often produces alarming symptoms of collapse, diarrhœa, sneezing, and delirium. Quick deprivation is the best, but it must be conducted under close supervision in a suitable home. I have known some who were unable to bear total abstinence from the drug.

Lead.—The poison of lead is an unquestionable cause of insanity in some who are exposed to it, and the physicians of our public asylums have recorded cases from time to time. In the *Journal of Mental Science* (Vols. XXVI. and XXXII.) numerous cases are mentioned with various symptoms by Drs. Rayner, Robertson, Savage and Atkins. That long-continued poisoning by lead will produce a degeneration of the nerve tissues with motor and mental trouble is to be expected, and it is probable that the symptoms will be similar to those of chronic alcoholic poisoning, and also those of general paralysis, for some patients have been looked upon as general paralytics till the blue line and history proclaimed the true nature of the disease. Dr. Rayner speaks also of cases of protracted lead intoxication by minute quantities producing slowly-developing sensory hallucinations, shown by the absence of the feeling of persecution and the persistence of hallucinations of sight. And he also records others in which the poisoning developed gout in the first instance, and later the gouty and lead poisons appear to have united in their action on the nervous system and given rise to mental disorder closely resembling general paralysis. Dr. Robertson relates several cases in which besides nervous symptoms the sight was affected. One patient, a girl of fourteen, employed in some dye works was delirious for some weeks. She became calmer and reason returned in about two months. Sight, however, was irretrievably lost, both optic discs being in a state of white atrophy. The restoration of the mental powers appeared to indicate that the higher centres of the hemispheres were not damaged beyond recovery. Dr. Savage narrates the case of a man who had been handling lead for three or four months, and that of a girl whose maniacal symptoms followed vaginal injections of lead lotion.

These two patients recovered, the poisoning not being of long duration. When it has continued for years and produced degenerative changes, the prognosis is extremely unfavorable. The few cases I have myself seen were characterized by melancholia of an ordinary type.

Insanity and General Diseases.

Syphilis.

That syphilis produces changes in the brain is now conceded by all. These changes, however, do not, it is said, affect the nerve tissues—the nerve cells and fibres—but only the neuroglia, vessels, meninges, lymphatics, or bone, the nerve structures being affected secondarily through obstruction of the vessels and starvation or pressure caused by syphilomata or hypertrophy of the neuroglia or fibrous tissue. Dr. Clouston[18] narrates some striking cases of "vascular syphilitic insanity." One man, twelve years after he had contracted syphilis, became insane and never recovered. He became subject to regularly recurring convulsive seizures; after some years there were general weakness, partial paralysis of the left side, and thickness of speech. Then with enfeeblement and loss of memory he passed into stupor and died, twenty-five years after he had contracted syphilis. On examination the calvaria was condensed, the dura thickened and adherent to the bone and pia, and the latter to the convolutions. A great part of the centre of the anterior lobe of the right hemisphere and many of its convolutions were atrophied. There was hypertrophy of all the arterial coats and every form of irregular local arteritis.

Dr. Clouston also mentions some extraordinary cases in which, as the result of slow syphilitic arteritis, the whole of the white substance in the inside of the anterior and middle lobes, lying between the outside convolutions and the central ganglia, had gradually and entirely disappeared leaving the grey matter intact. This is due to the different mode in which the grey and the white matter are supplied with blood and the much larger quantity which the grey receives. Syphilomata cause brain and mental symptoms of varying character, which may give way to treatment and the patient recover. There is evidence in them of coarse disease, but there are other cases which are of more doubtful pathology when a patient becomes insane after having contracted syphilis either recently or some years previously. The mental symptoms may be those of ordinary insanity, mania, or melancholia, with or without delusions. There may be symptoms of secondary syphilis, or these may have long passed away. It is conceded that these patients are persons predisposed to insanity. Does

the fear of the disease bring on the insanity, or is it due to the effect of the syphilitic poison? Dr. Clouston is of opinion that it is due to slight brain starvation from an obscure syphilitic irritation. It may also be due in the early stage to a poisoned and deteriorated state of blood, and so to malnutrition of the cells.

Authors are not agreed as to the precise way in which the mischief is brought about, and such an authority as Bevan Lewis excludes syphilis altogether from his category of causes. Many cases of general paralysis occur in those who have been the victims of the disease, and there are also cases of so-called pseudo-general paralysis which closely resemble the true. Here antisyphilitic treatment will now and then arrest the decline and lead to the belief that a case of general paralysis has been cured. In cases of undoubted general paralysis I have never seen such treatment do any good but often great harm. That syphilis produces ordinary curable insanity, mania, or melancholia is very doubtful. The commissioners in lunacy give 4.9 as the percentage of cases caused by venereal disease, and these probably were all cases of general paralysis. One hears of syphilis in melancholia because many imagine that they are suffering from it, even those who have never had any trace of the disease, while others who have contracted it and have long been cured, or who have had gonorrhœa only, will cling to the delusion that they are still suffering from syphilis and will point to every spot on their bodies in confirmation of their fancy. All these delusions are gloomy ideas which are due to the melancholia and not to syphilis. Just as one patient imagines that he has the leprosy of the Old Testament, so another will think that he has syphilis; but when recovery takes place the delusion passes away, and to order anything like antisyphilitic treatment would be more likely to encourage and confirm than to dispel it. I lately saw a young man in a state of mania from which he rapidly recovered; he had the typical pegged upper median incisors, and had always been of somewhat weak mind, but though he was evidently the subject of congenital syphilis, he had not himself contracted the disease. Congenital syphilis is the cause not of insanity, but of idiocy, juvenile dementia, and nervous affections of many kinds. The prognosis in all whose mental powers are affected is extremely unfavorable.

Rheumatism.

There appear to be cases in which an acute attack of rheumatism gives rise to mental symptoms which may vary greatly. Dr. Clouston draws attention to the connection between chorea and rheumatism, and mentions two patients in whom acute choreic insanity followed

rheumatic pain and swelling, and continued with high temperature for some time. The connection between chorea and rheumatism is a much argued question. There seems great reason to doubt the theory that the former is produced by means of emboli derived from the heart and affecting the corpus striatum.

That chorea follows rheumatism sometimes is certain, but it often occurs in cases in which there has been no rheumatism, and there are many in whom mental symptoms have supervened upon rheumatic without anything in the shape of choreic movements. We know that after any acute disease accompanied by a high temperature, mental symptoms not infrequently appear, as in the so-called post-febrile insanity, of which I shall have to speak. It is not surprising therefore that after acute or subacute rheumatism the brain should be affected, especially when there is a cessation of the pain. It seems clear that we have a transference to the brain of the rheumatic poison just as we have of the gouty, a transference which causes hyperæmia and interference with the mental function, the latter shown either in dulness and inability to attend to ordinary occupation—to a moral change or in the more acute symptoms of mania or delirious mania. The mental symptoms, though very marked, are not attended by the feverish condition which may have preceded them, and this shows that it is not the fever alone which causes the mania. The temperature in the latter follows the course of that which we find in ordinary insanity, ranging from the normal to 100° or 101° in very acute cases. As in post-febrile insanity, the temperature is lower during the insanity than it has been previously during the febrile attack. The patients will be found in both cases to be persons prone to neurotic disturbance, whose brain has been thrown off its balance by the febrile condition. That there is a transference of the rheumatic poison seems probable from the converse. I was summoned to see a woman who was in a condition of very acute melancholia with refusal of food. Her friends would not allow her to be removed, being fully persuaded that she would die, and this seemed a very probable result. I sent a nurse to them who in a few days returned, the case having, as I supposed, terminated fatally. It was not so, however; in some forty-eight hours acute pain and swelling appeared in the hands and elbows, and the mental symptoms vanished at once. As in post-febrile insanity recovery usually follows the mental disturbance which is the sequel of rheumatism.

Gout.

Writers describe the insanity of gout as distinct from that which is associated with rheumatism, but there must be a very close connection between the two, just as we see cases to which is given the

name of rheumatic gout, in which the near relationship of the two diseases is manifest. Gouty people are proverbially prone to mental disturbance, to irritability and instability of brain and nervous system. We know how mental causes will give rise to an attack of gout; men who are most temperate in their lives will get it after they have been subjected to great mental strain or severe shock, to one of the causes, in fact, which may produce in another symptoms of insanity. The brain, which thus acts on the general system and gives rise to the phenomena of gout, is sometimes affected by the disease and its stability is upset by a reflex or transference of the gouty disorder. The alternations between the two have been noticed by many writers. Melancholia, sometimes of long duration, has passed away on the occurrence of acute gout, and, conversely, anything which has caused an attack of gout to suddenly disappear, as exposure to cold, has been followed by pronounced mental symptoms. Dr. Garrod gives several instances of this. Also it has happened that strong antigout remedies taken for the purpose of staving off an attack have produced violent mental symptoms, just as in epileptics we sometimes see acute mania follow the administration of bromide, which has caused the cessation of the fits. When these recur the mania subsides. The cases of so-called *suppressed* gout are those in which the mental symptoms disappear when the severe joint attacks make their appearance.

Sunstroke.

I see a number of Indian officials, civil and military, and a few ladies, who after residence in that country become insane, and a large number of these are said to have suffered from sunstroke. Sunstroke, in the strict meaning of the word, implies a sudden collapse owing to the direct rays of the sun, and this is not a common precursor of insanity. Heat-stroke is a better name than sunstroke, for that which causes the mental disturbance in so many is the protracted exposure to heat, day after day and night after night, in the hot season. So far from the insanity being due to the sun's rays, it is probable that the heat at night has more to do with it than the heat at noon, for healthy, sound, and natural sleep is prevented or marred by the high temperature, and I have had a vivid description from a lady of the sufferings and mental troubles she experienced at night in a hot station. In many cases permanent damage may be done by the sun. "The most abiding results of sunstroke," says Dr. Hyslop,[19] "are all referable to impaired functional energy of the cerebrospinal system, and this impairment shows itself either in motor paralysis, sensory paralysis of common or special sensation, hyper- and dysæsthesiæ of the nerves of common or special sensation, in debility and undue ex-

citability of the emotional centres, and in similar states of the cerebral hemispheres and spinal cord; or, more commonly, in some nervous defect or perversion consisting in a functional paralysis of one or more of the great nerve centres." Sir Joseph Fayrer tells us[20] that the condition of sunstroke is intense pyrexia due to vasomotor paralysis and to the nerve centres being overstimulated and then exhausted by the action of heat on the body generally. The exposure to the sun may bring about not only mental but cerebral changes which may simulate those of general paralysis. I have not seen many cases of undoubted general paralysis in Indian officers, but the physical symptoms may make us suspect it. It is not to be forgotten that with the heat of India may be combined the effects of syphilis and alcohol, and when physical symptoms of cerebral disease coexist with mental, the diagnosis and prognosis may be complicated in this manner. I have seen many, however, in whom the disturbance was purely mental and passed off when they left India, sometimes before they reached England. In some recovery has taken place only after a considerable period, yet in these uncomplicated cases the termination has almost always been favorable. Then arises the question, Shall the patient return to the tropical climate? Many are anxious to do so, for to many it is of great importance on account of length of service, pay, or pension, but it is most unwise of them to make the experiment, and we should try and dissuade them; few can stand the heat again any more than they can tolerate the effect of alcohol, and their return is usually followed by a rapid break down.

Anæmia.

There are many cases of insanity which appear to be due to an impoverishment of the blood and an alteration in the quality rather than the quantity of that which has to nourish the cells of the brain. This impoverishment may be due to starvation and privation or to some cause which affects the blood itself. The form of insanity produced in this manner is chiefly, as might be expected, melancholia, which is usually associated with a failing strength, whatever the origin of the failure.

In the *American Journal of Insanity* (Vol. XLIX., 604) Dr. Whitmore Steele has recorded observations made by him in thirty-five cases of melancholia, which showed a decrease in the corpuscular richness and a deficiency in the percentage of hæmoglobin, and he also gives the results of a systematic tonic treatment and the mental changes that were coincident with this alteration. For counting the corpuscles he used the Thoma-Zeiss hæmocytometer, and for estimating the percentage of hæmoglobin the hæmoglobinometer of

Fleischl. In most of the cases the blood was examined between four and five hours after meals and, as a rule, in the morning. He gives a table of the thirty-five cases showing the age and weight of the patient before undergoing treatment, the amount of hæmoglobin per cent., and the number of red corpuscles, and the figures denote a marked anæmia in most of the cases and an average percentage of red corpuscles and of hæmoglobin much below the normal. He also examined at the same time several cases of acute mania and found that, although the corpuscular richness was less diminished, the amount of hæmoglobin was reduced to about the same percentage as in the melancholic patients.

Of the thirty-five cases twelve were selected and put upon special tonic treatment, consisting of the administration to some of cod-liver oil, iron in the form of an elixir of iron, quinine, and strychnine, while to others with an irritable stomach was given an elixir of the citrate of iron in ten-grain doses three times daily. These patients having been kept on tonic treatment with nutritious diet and under good hygienic conditions for a period of six weeks, their blood was examined and the results recorded. It was seen that in about fifty per cent. there was already some improvement, slight in some, and going on to complete recovery in others. In some which showed no improvement at the time of the second examination the mental symptoms improved subsequently and convalescence followed. Another observer, Dr. Macphail,[21] found a very marked deterioration of the blood in melancholia, but not so great as in the cases of Dr. Steele. The conclusions of the latter are: 1. That in melancholia, both acute and chronic, there is a very marked deficiency in the number of hæmocytes, in very few cases the percentage even approaching the normal, and that the percentage of hæmoglobin is reduced in like proportion; 2. That a number of cases showing considerable crenation of the hæmocytes at first are found to be much less crenated after tonic treatment and the mental improvement following it; 3. That a systematic tonic treatment is found markedly efficacious in the treatment of this form of mental disorder.

Insanity and Kidney Disease.

That kidney disease is a cause of insanity can hardly be maintained by any alienist. It is most unusual to meet with any evidence of kidney disease in recent cases admitted into asylums, and at any rate in my own experience there has been a surprisingly small amount of albuminuria or glycosuria. Of the two I am inclined to think that the latter has been the more frequent. Dr. Savage says "it is not common to meet with albuminuria in acute cases of insanity, and I

may say this after examining several hundred specimens of urine of the insane." A curious case of a lady, aged sixty years, is now under my observation. In the year 1868, after her first confinement, she had an attack of melancholia which was tedious, a twelvemonth elapsing before she was quite well. In the year 1883 she had a second, which passed off in six months or less. In 1893 she had a third, but on this occasion the urine was enormously loaded with albumin, which I was informed had been its condition for some time. She was apparently in good bodily health and was quite unconscious herself of there being anything the matter with her kidneys. She made a good recovery from the melancholia and went home in excellent spirits in about six months, the albumin remaining the same and there being an entire absence of kidney symptoms. In less than a year, however, she again became melancholic, and this has now continued for nearly two years and a half, there being at present some improvement but not recovery. The albumin has remained throughout in nearly the same amount, but without any symptoms and without any special treatment. In this case the albuminuria and the melancholia appear to have no connection. She had two attacks prior to the appearance of the former, and recovered from a third in spite of it. The extraordinary part of it is that she should excrete so large an amount of albumin without any failure in health. There must be a considerable portion of the renal structure still intact.

The cases of insanity with Bright's disease which have come under my notice have been but few and have been in persons broken and weak in health and, as might be expected, have been all of the melancholic type. Dr. Alice Bennett, the medical superintendent of the female department of the Morristown Asylum (Pennsylvania) has recorded a series of sixty cases[22] of insanity as a symptom of Bright's disease, which are most interesting and valuable. Twenty-four of the patients died, eleven recovered, many remained stationary or were gradually declining. We are told that although the symptoms varied, the most constant one was "some form of mental pain ranging from simple depression through all degrees and varieties of delusions of persecutions, self-condemnation, and apprehension, with or without hallucinations, up to a condition characterized by a frenzy of fear with extraordinary motor excitement and rapid physical prostration, the 'grave delirium' or 'typhomania' of some authors." Dr. Bennett's report bears out my own experience that the insanity in this complication is usually melancholia.

Dr. Hubert Bristowe has found in the records of the Somerset Asylum a large percentage of cases of general paralysis in which the post-mortem examination has revealed granular disease of the kid-

ney.[23] He found that of 75 cases only 9 were free or apparently free from renal disease. Of 66 cases 51 had well-marked granular kidneys, and the other 15 had diseased kidneys which were most probably granular, though in a less advanced degree. He compares the condition of the vessels in general paralysis and contracted granular kidney, and shows that in the former, in the vessels of the pia mater and cerebral hemispheres, there is a slow inflammatory process, the ultimate change being a fibrosis of the vessel walls, an organizing of the inflammatory products round the vessels which forms contracting fibrous tissue, thus bringing about a true cirrhosis such as is found in the kidney or liver. He propounds three views as to the relation of the two diseases; first, is the chronic renal disease responsible for the increase of arterial tension throughout the body with transudation through the capillaries and the lesions depending thereon? Such a view he thinks disproved by the fact that general paralysis sometimes exists without renal disease. The next view is that an arteriocapillary fibrosis is the commencement of both diseases, that they are both manifestations of a common condition. The third view is that both diseases have a common cause which may act directly on only one set of organs, *i.e.*, the arteries and capillaries, this cause being some poison, we know not what, which may induce chronic renal disease and general paralysis.

With regard to these various theories, it must be remembered that post-mortem examination reveals the results of chronic degeneration which has been going on till the death of the general paralytic. Whether the change began first in the kidney or the brain cannot be decided by the appearances after death. Albuminuria or other evidence of kidney disease is rare at the commencement of general paralysis, dropsy or uræmic symptoms are rare at the end, and if granular kidneys are found frequently after death, it is probable that the disease is a concomitant rather than a cause of general paralysis. There may be a toxic origin sometimes, but although the poisons of syphilis, alcohol, or gout may exist in many cases, they will not account for all, and if all general paralysis has a toxic origin, the toxins must be generated within the body, and with regard to these our knowledge at present is only in its infancy.

Diabetes.

Diabetes is found from time to time in insane patients. Dr. Savage says it is rare, in this supporting the view of Dr. Hale White. I believe we should find sugar in small quantity in many cases if we looked carefully for it, but it is overlooked because there are no symptoms to denote its presence, and the latter may be temporary

only. The vexed question arises as to the nature of diabetes, Is it a disorder of the nervous system or of the digestive? There is much to be said in favor of the former view, especially the fact that mental strain and worry are frequent causes of diabetes as they are of insanity, and Dr. Savage draws attention to the alternation between the two diseases and says that a patient may suffer from diabetes for a time and then may become insane, the symptoms of diabetes disappearing to reappear on the recovery from the insanity. I was lately called to see an old lady who had suffered from diabetes in a greater or less degree for some years. When I saw her, she was acutely melancholic. Her urine contained albumin but no sugar. In a very short time the melancholia passed away, but a large amount of sugar was noticeable together with albumin. In the course of a week gangrene of the right foot commenced. This was of the dry kind and it travelled up the leg, the foot becoming quite mummified. The melancholia did not return, but she died in about three weeks. I have an elderly man now under observation who had and recovered from an attack of melancholia some years ago. In 1895 he broke down again and with the melancholia developed sugar in the urine. This has varied from time to time as has the melancholia, though I cannot say that the variation has corresponded in a strictly inverse proportion. He has at no time kept to a severe antidiabetic diet and I do not think that it would be advisable to treat melancholic people according to strict rule, even if they have sugar in the urine. In the cases just mentioned, the insanity was not caused by the diabetes. There was considerable mental worry in both cases, and this, together with advanced age, was undoubtedly the cause of the mental symptoms. The man has a son who is almost as melancholic as himself, and his medical attendant tells me that he has found a trace of sugar in the water of the latter. It is said that uranium nitrate has a beneficial effect on these diabetic people.

Myxœdema.

Myxœdema and Insanity.—This affection was first described by Sir William Gull in 1873, and one of the patients whose case he mentioned came under my care for the mental disorder in 1880. The œdema had by that time passed away, leaving the skin baggy and pendulous from the distention it had undergone. There were no teeth and very little hair, the face was flabby and totally changed in expression, the skin was dry and rough, and the woman looked seventy instead of fifty-two years which was her age. In mind she was a curious mixture. Apparently demented, she yet retained a considerable amount of intellect of a feeble sort, and could even become

amorous. She could write a much better letter than could have been expected. She was throughout very feeble, and at last fainted while sitting on the stool, and died somewhat suddenly.

The disease occurs chiefly in women of middle or advancing age and sooner or later intellectual change is noticed in all, the change being an advancing slowness in apprehension, thought, or action. In some cases delusions or hallucinations may be discovered, but generally the insanity is of a negative rather than a positive character. The patients are greatly affected by cold and the temperature is usually below the normal.

Within the last few years the prognosis in cases of myxœdema has completely changed, and whereas formerly it seemed to be a hopeless and incurable disease, recovery is now of common occurrence. All this has come about from the discovery of the good results which follow the administration of the thyroid gland. This has been effected in various ways by transplantation, injection of extract, and lastly by feeding with extract or raw thyroids. Space does not allow of a detailed account; suffice it to say that the most satisfactory improvement and in many cases recovery has followed all these processes and especially the last. (See Vol. IV., p. 735, of this work.) Mr. Cecil Beadles has collected [24] a number of cases, and it is not too much to hope that the disease may be arrested at so early a stage that the mental symptoms may not bring the patients into the category of the insane.

Not only are adult myxœdematous patients improved or cured by thyroid feeding, but congenital myxœdema, commonly called sporadic cretinism, which is due to loss of function of the thyroid body, is vastly ameliorated by thyroid injection or feeding.

Exophthalmic Goitre.

The connection between exophthalmic goitre and insanity on the one hand, and myxœdema and insanity on the other, is of extreme interest. I had for some years under my care a lady who had suffered from the first-named disorder. The goitre, when I first knew her, had subsided, but the exophthalmos remained. She became pregnant, and after parturition insanity appeared with delusions of suspicion. She was in an asylum for a year and then returned home, but never entirely recovered, and later developed dipsomania with hallucinations of hearing, and eventually died of phthisis. In the *Journal of Mental Science* (XLII., 27) Dr. Maude gives the particulars of twenty cases and the mental changes observed. All were women about equally divided in age between early womanhood and the sexual decline, all private patients. None, or perhaps only one, could be

claimed as insane, but only two presented states of mind at all normal. The mental condition was very difficult to describe, but their peculiarities were highly defined. They presented an extreme restlessness with tricks of constant movement, were easily startled, sometimes had hallucinations of sight and hearing, and often suffered from vertigo. They became irritable, short-tempered, and discontented, prone to take offence, untruthful, and suspicious. The memory generally became much impaired and there was a marked confusion called by Sir J. Russell Reynolds, a "chorea of ideas." The patient finds it impossible to think of anything consecutively. If she makes an effort to write or talk about anything, other ideas crowd into her mind and displace the original one. Dr. Savage relates three cases[25] of patients at Bethlem, of whom two died and the third was discharged relieved, the exophthalmos and insanity both persisting. Dr. Carlyle Johnstone also reports[26] a case of exophthalmic goitre with mania, in which the patient died after being in the asylum nearly a year. Dr. Savage mentions certain cases of recurrent insanity in which with each period of mental disorder the whole of the symptoms of exophthalmic goitre appear, passing away again when the mental disorder subsides. The prognosis is bad in all the patients whose disease is confirmed, and it generally ends in death at an early period.

Cardiac Disease.

That any interference with the circulation in the brain and the nutrition of the cortex should be productive of insanity, is a reasonable conclusion. To study the etiology of this variety it will not be sufficient to examine the results of post-mortem examinations. Many changes in the heart seen after death are the consequence of the long-continued, violent, and irregular action of the organ produced by mental excitement during many years. In chronic cases we most commonly find the right side much thinner than the normal and dilated, while the left ventricle is thickened. It is in recent cases that we find cardiac disease causing insanity by interference with the brain nutrition. Young people have probably had attacks of rheumatic fever and their hearts are damaged by endocarditis, while the old may have various forms of valvular disease with or without atheroma. Dr. Mickle enumerates no less than nine forms of cardiac disease and associates with each certain mental symptoms; it is doubtful, however, whether such symptoms are to be found uniformly in each variety. Dr. Savage says: "With aortic or with both aortic and mitral disease, the symptoms may be either melancholic or maniacal; but I am inclined to think that with simple aortic disease and with hypertrophy of the left ventricle, it is at least not uncommon to

meet with acute mania and exaltation of ideas. In doubtful cases of men with exaltation of ideas, I expect to find post mortem hypertrophy of the left ventricle and atheroma of the aorta with more or less brain change."[27]

The nature of the symptoms depends, in my opinion, on the age and general condition of the patient. In the young we shall find maniacal excitement, incoherence, and perhaps exaltation. In the old, melancholia will certainly be the form most frequently met with. It is far more common to find in the insane feeble and sluggish heart action and a circulation which implies an insufficient nutrition of the brain. It does not follow that the insanity is due to the heart alone. The latter may fail for want of proper innervation or from general bodily weakness, and the pulse may be intermittent not from disease but from loss of power. A condition of brain due to anæmia rather than to cardiac disease is more frequent than insanity caused by the latter.

Disease of the Digestive Organs.

Whereas in old days the liver was supposed to have more to do with the causation of insanity than any other organ and the name of melancholia is derived from the black bile secreted therein, we now find it passed over almost entirely in our text-books, and no variety of insanity is coupled with it. Yet the lay mind is still haunted by the notion that the liver is responsible for depression of spirits and that it ought to be attacked by all the weapons which pharmacy affords. That the liver may be out of order in the general upset of the nervous system is possible, but that it is the cause of insanity by being thus disordered is doubtful, and although a purgative sometimes does great good and, by unloading the whole alimentary canal, may take away certain toxins and so relieve the depressed feeling that hangs over a man, yet a course of drastic medicine, such as used to be prescribed for the purpose of setting right the liver, is likely to be productive of more harm than good. Similarly there may be derangement of the stomach and loss of appetite, together with obstinate constipation. Here again the popular idea is that the mental symptoms are all due to indigestion and want of healthy action. Because there is constipation the patient takes less and less food for fear of overloading the alimentary organs. He gets thinner and thinner, looks yellow and cachectic, and the less food he takes the less will the bowels act, and the stronger are the aperient drugs which are deemed necessary. This hypochondriacal state may continue for a long time and end in extreme emaciation and neurasthenia or in insanity, the latter being produced not by derangement of the viscera but by starvation. If we are able to take such a patient

in hand and to compel him to eat and drink that which is ordered, regardless of his protests, it is astonishing how amendment of the mental symptoms follows the increased nourishment. Often in these reduced people an illness, such as bronchitis or influenza, is the immediate forerunner of the melancholia and is set down as the cause.

Uterine Disease.

On no subject do authorities differ more widely than on the connection between insanity and uterine disease, with which may be coupled all the disorders of the ovaries and ovulation. At a meeting of the Medico-Psychological Association in 1886 a discussion took place upon it wherein views were stated which ranged from Spitzka's, which was quoted, that even the grossest lesions of the female generative organs are not competent by themselves to affect the mind to such a degree as to produce insanity, to that of Newington, who maintained that the whole of the insanity, specially associated with the female sex was more or less connected with the sexual relations. In the *Journal of Mental Science* (Vol. XXX., 509) is an interesting paper by Wiglesworth containing the results of the post-mortem examination of 109 patients. Of these, he tells us, in 42 the uterus and its appendages were perfectly normal or at the most showed very trivial changes. Of the remainder 15 presented very slight alterations. In 3 the changes were secondary to parturition, and in one other were secondary and of recent origin. In 3 they were due to tuberculous constitutional taint as manifested in the lungs and other organs. But of the whole 109 almost all were chronic cases. In 7 only was the insanity of less than a year's duration, 8 were general paralytics, and many were of long standing, from four years up to twenty-seven. He also gives particulars of 65 insane women examined under ether during life, and here he found that 35 presented nothing worth calling abnormal. Of the remaining 40, 4 had congenital defects, 13 displacements of various kinds, 5 had ulceration of the os, 2 uterine fibromata, 1 was a case of subinvolution with sexual delusions which did not disappear when the uterus improved under treatment. One case presented hypertrophy of cervix with contraction of os, and in 1 there was some deflection of the uterus from old pelvic inflammation. In 6 there were lesions of the ovaries, in 4 of these there was some slight enlargement, and in the other 2 prolapse in Douglas' pouch. In 5 only were there sexual delusions, and in none of these was the insanity of less than two and a quarter years' duration. One patient had been insane eighteen years and 2 were general paralytics. From an examination of chronic cases little can be learned, as a uterine affection occurring at the commencement

of the insanity may have passed away, or one discovered late may have begun long after mental symptoms have been observed.

That there is a connection between the nervous system and the sexual organs is a matter about which there can be no doubt, and the furious erotic excitement which is found continually in cases of acute mania clearly proves it, and proves also that the sexual symptoms are the result of the brain excitement and not the cause; when the latter subsides, the symptoms vanish. To assume that in all the young women who are thus affected there must be something amiss with the sexual organs, and to subject them to local examination, either under or without an anæsthetic, would be not only useless but injurious. Yet that there are cases in which uterine troubles have been the origin of insanity is certain from the evidence of trustworthy observers, cases, too, in which recovery has followed the restoration of the disordered or displaced organ. Reflex irritation derived from any organ or part of the body may bring about mental trouble in a sensitive or predisposed brain. It is no wonder, therefore, that uterine or ovarian irritation may be the origin in some patients. The commissioners in their last report give 1.1 per cent. as the number among the assigned causes in the average of five years, 1890–94, and this in an average of 8,797 female patients admitted. It does not always follow that when there is uterine trouble it is the cause of the insanity or that removal will effect a cure. A lady under my care suffered from prolapse which was remedied by a pessary, yet the insanity remained; and another was wearing a pessary and had been doing so for some time; this was thought to have set up irritation, but the removal of it brought no relief to the mental symptoms. Thousands of women have uterine disorders of one kind or another, some serious, some trifling. For the latter they may or may not consult a specialist. Yet we seldom hear of insanity in the practice of gynecologists, and when it occurs, it will generally be found that there is in the background the same predisposing cause of the inherited taint of a neurotic ancestry.

Insanity of Pregnancy.

Insanity occurring prior to delivery is comparatively rare and few cases are of sufficient gravity to require restraint in an asylum. Bevan Lewis tells us that only 11 cases were admitted into the West Riding Asylum out of 1,814 females, and that of the 11 women only 2 were primiparæ; the larger proportion first showed symptoms of derangement after the third month of gestation, and no one had had a previous attack of insanity. The recoveries were in the proportion of 54.5 per cent., 2 more left sufficiently relieved for home treatment,

2 died, one from puerperal fever and the other from chronic phthisis, and 2 left recovered before their confinement. Dr. Savage in a paper read before the Medical Society spoke of insanity occurring (*a*) at the time of conception; (*b*) at the time of quickening; (*c*) in the later months of pregnancy. I doubt if these distinctions can be borne out by clinical observation. In my own experience I have found but few cases, and these in women who had had several children and had had them rapidly. It has occurred in the later pregnancies, not the earlier, has lasted up to the birth of the child and then passed away. Bevan Lewis does not give the ages of his patients; mine have not been young, but people oppressed with the cares of the family already around them, and dreading the advent of more. The question of the induction of premature labor will probably arise, but as to this authorities are tolerably well agreed that the cases are rare in which it is necessary, for these women generally do well after confinement. The symptoms are those of melancholia of a mild type, with ordinary delusions of fear and distrust, and, as might be expected, suicidal tendency. Here and there we meet with a case which rises into acute melancholia with all the intense fear and excitement which characterize the extra form of this malady. Of such patients the prognosis is most unfavorable, and it is impossible to treat them in a private house, but fortunately they are rare.

Puerperal Insanity.

This name is given to any mental disturbance which arises after childbirth. It may come on in a few days or weeks or after an interval of two months or six months, or any time within a twelvemonth. Later than this it ought not to bear the name of puerperal. The symptoms vary according as the outbreak is early or late, those of acute mania or acute delirium being most frequent, and characterizing the insanity which commences in the first or second week after labor, while those which begin later, after a month or longer, are more commonly melancholia; of the whole number the proportion of the cases of mania is about sixty-six per cent., those of melancholia being thirty-three.

That the processes of parturition and of uterine involution which follows constitute a time of trial to any woman who is by heredity predisposed to instability, must be obvious to all. Yet they are processes of nature through which thousands of women pass without harm even in highly civilized and specialized communities, while to natives of uncivilized and savage races such an event does not necessitate even a day's retirement. They are not "brought to bed" or

"confined" at all, but resume their daily life almost at once. It is clear, therefore, that something must be superadded to cause certain women to break out into mental disturbance after an easy, short, and safe delivery, and to do this again and again after the birth of many children. In the case of a primipara everything is new and exciting; there is a mental transformation, the wakening of the instinct of maternity, fear of the approaching confinement, and a new physical condition due to the gravid uterus and the nutrition of the child. Therefore it is not wonderful that we find insanity after first confinements, but out of sixty-eight puerperal cases Bevan Lewis tells us that only twenty-two were primiparæ, or a percentage of 32.3, so that the larger number had had children prior to the outbreak.

When we look for the cause of an attack of puerperal insanity, that which predisposes the patient is beyond question the inheritance of an unstable, nervous constitution; but there may be a variety of exciting causes. Women who have children late in life are specially liable to the disorder; ill health during the pregnancy, rapidly recurring labors, trouble with the milk or breasts, or albuminuria, may play a part in the causation. And mental anxiety may do no less. Straitened means and the certainty of increased expense necessitated by the confinement and the addition of another child, are potent disturbing elements, and to these may be added not infrequently a husband earning but little, perhaps idle or a drunkard, or children causing anxiety by ill health or bad bringing up, and in the case of a woman predisposed, the mental symptoms may be fostered by the absence of quiet necessary to such a one after delivery. Sleep here is of the utmost importance, but it is frequently overlooked by the nurse in charge of the patient, and from her we may gain very inaccurate information as to the duration of it. Some nurses who have a chattering tongue give a patient no rest. Day or night their talk goes on, and if they are not talking they are poking the fire or preparing food, or they wake the mother to nurse the baby, and so disturb her many times in the night. I am confident that many an attack has been brought about in this way. Friends, too, are not kept away, but are allowed to visit and perhaps bring disquieting news or excite by religious exhortations, and the like. All this acts as a cause, though it will not be given as the true one when inquiry is made. Something much more remote will probably be alleged and the true reason is ignored or concealed.

What is the *treatment?* Dr. Savage speaks of a *mania transitoria*, a delirious excitement which may come on during the second or third day after delivery, arising suddenly and passing off quickly, and this, he says, may be frequently subdued by a purge and a nar-

cotic at night. These cases, however, are rare in my experience. More commonly, a patient gradually drifts into an insane condition, the symptoms becoming more and more developed day by day, the first of all being sleeplessness. The sleep of all patients ought to attract the attention of the physician, but especially of these, and, if on close inquiry it is found deficient, prompt measures should be taken. The child should not be nursed by the mother at night, and sleep should be procured by narcotics which are of much greater use at this stage than later. Paraldehyde, sulphonal, or what is perhaps better, a combination of chloral and bromide of potassium will bring sleep with tolerable certainty, and enforced quiet and plenty of light will often avert the dreaded attack. The milk and lochia must be attended to, but they are frequently normal even in acute mania.

If our efforts to prevent fail, the symptoms gradually increase, there is less and less sleep, much talking, fitful changes of temper, likes and dislikes, and endless complaints rising into charges and delusions about people and food. The excitement increases also and the chattering is incessant; it is evident that an attack of mania has commenced. What is to be done? The first thing is to provide proper nurses skilled in the treatment of such cases. This will probably be resented by the monthly nurse, who may have been at the bottom of the mischief, but an unskilled person is worse than useless.

The question will then arise, shall the patient be treated at home or sent to an asylum? All will depend on the funds available, for three or four nurses may be necessary, constant medical visits, and a house in a quiet situation without the roar of street traffic or the cries of news venders, where, if it be hot weather, the windows can be open day and night. The illness now will follow the course of an attack of acute delirious mania, and the important point will be the administration of food. If this can be given in sufficient quantity and without a prolonged struggle, we may successfully carry out the treatment at home. If feeding by a tube is necessary, the resources of an institution are almost always required. Of drugs none is so useful as the combination of chloral and bromide of potassium given to procure sleep, not to allay excitement; I have found it possible by an occasional dose to prevent the patient dying exhausted for want of sleep. Opium in any form is strongly contraindicated.

If three or four weeks after labor mental symptoms appear, they are almost always those of melancholia. They commence also with sleeplessness and should be treated in the same way; if not successful we shall find the ordinary symptoms of melancholia, refusal of food, delusions of wickedness and the like, and a woman in this condition

is extremely dangerous to herself and child or children. Under the title of melancholia will be discussed the treatment of such people.

Prognosis.—The prognosis in cases of puerperal insanity is extremely favorable. In fact, in no form of mental disturbance is the percentage of recoveries so high. Mr. Bevan Lewis gives the recovery rate of seventy cases as eighty per cent. Dr. Clouston tells us that 87.5 per cent. of his cases had recovered by the ninth month from the commencement of the insanity. And we find that the mortality in the cases of either physician was about the same, viz., 8.4 per cent. All these are cases of patients admitted into the West Riding or Edinburgh Asylum. If we had the statistics of all the women who are treated and make good recoveries at home, the percentage would probably be increased, though it is to be feared that the percentage of deaths would rise also from the inadequate care which many receive at home, whose friends through prejudice refuse to send them to an asylum. Our prognosis, both as to recovery and death, must be largely influenced by the treatment proposed.

Dr. Savage draws a distinction between cases of ordinary puerperal maniacal delirium and septic cases which depend on puerperal septicæmia, but he says it is rare to meet with a case of insanity which depends solely on septic causes. With the latter statement I quite agree. There may be certain septic symptoms arising in the course of the malady which may be a complication or even a consequence; but in true septicæmia ushered in by rigors, high temperature, and the usual phenomena of puerperal fever, insanity is as rare as it is in typhoid, though wandering delirium and hallucinations are common enough.

Insanity of Lactation.

The exhaustion produced by prolonged lactation causes insanity in a certain number of cases. The time at which this makes its appearance will vary according to the condition of the woman and her susceptibility, for it is not always an illness dependent upon anæmia and exhaustion only. The inherited predisposition will often account for it, and the excitation produced by the mammary secretion and the operation of suckling is of considerable importance. It is a question whether a woman predisposed to insanity should ever suckle her infant.

The symptoms, as may be expected, are those of melancholic depression and in most cases come on gradually, commencing with suspicion, irritability, and accusations. Though they may have been noticed for some time and have existed without much alteration,

there may come a sudden and most dangerous outburst of violence, homicidal or suicidal. A woman may conceive a delusion that her husband is unfaithful and try to murder him, or she may kill her children under some other delusion, and may be most suicidal attempting to do herself harm in every way. So acute are the symptoms that they may rise to those of delirious mania, as in ordinary puerperal insanity, and the patient will go through the attack in the same way. These very acute attacks occur in the early months after labor and should rather be called puerperal than lactational. The true lactational insanity caused by the exhaustion of suckling is almost always melancholia.

Prognosis.—Mr. Bevan Lewis gives the history of 65 cases of which 44, or 65.6 per cent., recovered; 6, or 9 per cent., were relieved; 8, or 12 per cent., died; and 9, or 13.4 per cent., remained as chronic insane. And he remarks that the ratio of the unfavorable cases, the fatal and the chronic, steadily augments towards the age of forty, increasing from one-sixth of the whole at the age of twenty to one-third at the age of forty.

Treatment.—Nothing special need be said as to this. Whether the disorder be acute delirium, acute melancholia, or the ordinary form of the latter, the usual treatment is necessary. The breasts may be troublesome and may require friction or belladonna liniment. The catamenia will probably be absent, but will reappear when the health is restored.

Post-Febrile Insanity.

Insanity sometimes occurs in the course or at the decline of acute disorders, and a long list of writers have recorded cases of this kind. One of the earliest was Dr. Hermann Weber, who in the forty-eighth volume of the Medico-Chirurgical Transactions relates the particulars of seven cases of measles, scarlatina, erysipelas, pneumonia, and typhoid fever in which, towards the decline of the disorder, maniacal delirium came on with delusions of an anxious nature, and hallucinations of the senses, especially of hearing, but also of sight. The duration of the derangement was short, extending from less than eight to forty-eight hours. The outbreak was sudden; the time was in general the early morning, and almost always the commencement was stated to have occurred immediately after waking.

These appear to be the typical cases of the insanity which suddenly appears in the decline of an acute disease. We may imagine the sequence to be of this kind: First, the patient is a person of unstable nerve organization whose balance is easily upset and has been upset by the febrile condition and high temperature; the tempera-

ture and circulation decline and less blood is carried to the exhausted brain centres; sleep ensues and the brain nutrition is lowered to its minimum, and on waking suddenly from a short sleep, the instability is at its height and delusions and delirium appear; food and sedatives procure rest and recuperation and the mania vanishes. Authors speak of insanity occurring as the earliest symptom of typhoid, and of its appearing not in the decline but during the height of a febrile illness. Delirium, we know, will often be found in acute disease even of a mild character, but this is not post-febrile insanity. The cases I have seen in private practice have almost all recovered, and the prognosis is generally good, but here and there we find those whose hereditary predisposition exposes them to a mental disturbance which does not pass away, or does so only after a long time. Many suffer greatly from the exhaustion following influenza and do not recover. But it is to be remembered that influenza is a convenient "cause" and origin of a malady of which the friends do not care to tell us the truth, and that every cold which has been caught during preceding years is called influenza. When the insanity does not come on suddenly, but slowly and insidiously, the prognosis is of course much more unfavorable.

Traumatic Insanity.

Under this head we may include all the cases which depend upon a blow or fall, or a sudden shock to the cerebrospinal system, such as may be caused by a railway accident. They may be divided into two classes: in one we find mental symptoms following a blow, fall, or shock, caused not by actual damage to the brain but by the disturbance of the mental balance; such insanity either passes away like that produced by other causes which are not somatic, or remains as a chronic monomania with hallucinations or delusions. A second is characterized by organic brain changes, the result of damage done to the brain structure, which bring about permanent enfeeblement, or lead to general paralysis.

The first of these classes comprises many whose equilibrium is upset by a blow or a fall of no great importance by which no serious damage is done to the head or the brain, but a shock is caused to the system, even if the head is not the part affected. A slight blow on the head, from the fall on it of the lid of a desk, I have known followed by a mental upset; the patient being an elderly woman, the disturbance took the form of melancholia. A young man fell from a scaffold, a fall of only a few feet; he did not fall on his head and was not hurt, but shortly afterwards he developed symptoms of acute dementia which were severe for some time, but from which he per-

fectly recovered. It is probable that many persons break down and become insane who have had slight blows or falls, about which little is said because no serious injury was noted at the time. Whether such causes should be termed traumatic may be questioned. If we confine this term only to cases in which the injury to the head has been serious, we find that it is not a common cause. Dr. Hartmann[2r] has collected 138 cases of insanity following injuries to the head, but he tells us that Krafft-Ebing among 462 cases found little more than 1 per cent., while Schlager among 500 patients found scarcely 10 per cent. The commissioners in lunacy in an average of admissions of 16,615 give a percentage of 2.9 as caused by "accident or injury." Dr. Hartmann says that there are generally concurrent causes, and that injuries to the head rarely cause insanity, save where there is a predisposition or the condition of the patient is unfavorable for quick recovery.

In 1888 Dr. Talcott read a paper before the annual meeting of the superintendents of American institutions in which he reported the recovery of two patients who had received severe blows on the head. One, a female, had received a fracture and had been trephined eighteen years previously. When she became maniacal the head was again trephined, and a depressed piece of bone removed. She was at first noisy, incoherent, and silly, then gloomy and anxious, but made a slow and steady progress towards recovery. Dr. Talcott also related two interesting cases in which a blow on the head had caused recovery in a person previously insane. One man had had seven attacks in nine years. In the seventh, while trying to swing on a gas bracket, he broke it and fell, striking his head. He was unconscious with symptoms of concussion. Three days after he was sensible and sane and three and a half years later he had had no return of insanity and was an active man of business. The other, a man suffering from delusional insanity, was struck on the head by a fellow-patient with an iron chamber. Next morning he was entirely free from delusions and soon went home well. Six years later he was in good mental health.

Far different is the fate of those who, having received an injury to the head, manifest after a long or short interval an alteration in character and habits. This may progress till it ends in delusions, in homicidal or suicidal impulses, or in loss of memory and dementia with signs of brain disease.

In these cases the brain has received some damage or bruising, either directly or by *contre coup*, and a gradual change and degeneration have set in and progressed till the mind has become obscured, while after death the morbid appearances correspond, thickening and

adherence of the meninges, old hemorrhages, and wasting of the brain and spinal cord.

Besides this termination, blows on the head may lead to true general paralysis of the insane. I have lately seen two patients whose disorder was ascribed to this cause. On one the top of a bedstead fell. The other while hunting had a most severe fall on his head. Dr. Mickle says that in some cases one cerebral hemisphere is much more affected than the other. This probably depends on the situation of the blow. In the two cases just mentioned, the disease ran its usual course, but the patients differed greatly, the one being quiet and becoming at an early period tractable and demented, the hunting man being furiously violent, requiring the restraint of an asylum.

Injury to the head may also be followed by epilepsy, and if the locality can be accurately defined, much good may follow an operation. So little risk is there nowadays in such a procedure that it may be proposed without much hesitation, and the operation itself may arrest the epilepsy, even if no irritating bone is found. Mr. Dent[29] has drawn attention to cases of insanity occurring after surgical operations, of which he has seen a few. He says the patients have usually been free from hereditary predisposition or neurotic taint. The mental symptoms have generally appeared from three to eight days after the operation, not immediately. Many of these cases do well when the mania is not very acute, but when the latter is the case and the operation has been a severe one, or when the constitution is damaged by alcohol or other disease, the patient may die even if the wound does well. In some cases he considers the insanity to have been set up by the anæsthetic, the symptoms following directly on the administration, and there appears to be no difference in this respect between one anæsthetic and another. It is probable that in all these patients the mental strain of anticipation is the chief cause of the insanity. Mr. Dent says it does not occur in the hysterical who vent their nervousness in this fashion, but in those whose feelings are controlled by a greater tension and by a reaction lose control after the operation is over.

Damage to the head at birth through difficult labor or the use of instruments is the cause of much mental defect, idiocy, or imbecility, and blows and falls in childhood may have similar results or may bring about convulsions or fits. Mental arrest rather than insanity is the outcome of such disaster.

Insanity of Childhood and Puberty.

Examining the insanity of children below the age of puberty we find such to be rare. Passing over idiocy and imbecility and all congenital defect, and likewise arrested development from fits in infancy, syphilis or injury, there remains to us a small number of girls and boys who show mental disturbance at an early age. These are all neurotic or "sensitive" children, the offspring of neurotic parents, often ultra-religious, who are constantly bringing before the child-mind the necessity of self-inspection, the advantage to self of being good, and the torments of hell that await the bad but can be avoided by the wise and prudent. The child with its inherited nerve weakness probably suffers in the first place from "night horrors," transient nightmares, and delirium, and at this stage much will depend on the judicious treatment of the nurse who may frighten it by stories of ghosts and robbers, of spectres, or policemen. With such tales and the parents' perpetual exhortations to piety, it is not surprising that we find from time to time children showing symptoms of melancholia; they are depressed, want to be alone, to sit in the dark, shunning the society of brothers and sisters, and unable to amuse or occupy themselves. Such a one must be removed from home, and this is as necessary here as in the case of an adult melancholic, and as childhood is pre-eminently imitative, the patient should be placed with healthy and lively children and not allowed to be alone at all. Special regard should be paid to the nutrition of the body. Very likely this has been neglected and instead of growth and bodily development proceeding normally from food, air, and exercise, there is an arrest and a substitution of nervous symptoms which should have no place in a child of this age. The necessity of an abundant supply of food, exercise, and sleep cannot be too strongly enjoined.

The child advances to the age of puberty, the age of great changes, and the unfolding of the procreative faculties with the function of menstruation. So important are these changes and so especial is the physiological epoch in the life of a boy or girl that it would appear probable on *a priori* grounds that we should find insanity to be common at this time. But it is not so. Though there are more cases now than there are in childhood, the number is small compared with those met with a few years later. In the report of the commissioners in lunacy for 1895 we read that during the five years 1889 to 1893 inclusive, the yearly average of patients admitted under the age of 15 was 301. Those admitted between the ages of 15 and 19 averaged 868, while those between 20 and 24 were 1,586. Notwithstanding

the great change at the time of puberty the individual is still a growing boy or girl, adding to stature and weight, developing muscular force and rejoicing in muscular activity and restless energy, enjoying the company of its fellows, competing with and rivalling them in feats of strength. Where all this is arrested and we find mental symptoms, egoism and self-consciousness, melancholic depression, maniacal excitement, epilepsy, or chorea, we may be certain that a bad constitution has been inherited. Insanity is not "acquired" at this age. As Dr. Clouston says: "The insanity of puberty is always a strongly hereditary insanity; it, in fact, never occurs except where there is a family tendency towards mental defect or towards some other of the neuroses." As might be expected, this insanity is more common in girls than in boys; the changes of the epoch are greater in them and the home life and home education lack many of the preventives which the school life of boys furnishes. The latter, however, has one danger which girls escape, viz., that of acquiring the habit of masturbation. This is much more frequently taught to boys than to girls. Some few of the latter may be self-taught, and women who are older may find out the pleasure derived from the excitation of the genitals, but in my experience not half the harm is done to them that there is to neurotic boys, who, taught the habit at school, indulge in it to excess and break down at an early age in what has been called the "insanity of masturbation." In comparing the age records as given in the report of the commissioners, it is to be remembered that all were cases bad enough to be admitted into asylums. But if we were to collect all the cases of the insanity of puberty which are treated out of asylums and pass as cases of hysteria and the like, we should greatly swell the number. More of these are treated at home than those of an older age. Being children, they are more easily managed in a private house.

Insanity of Adolescence.

I have said that according to the report of the commissioners there were admitted on an average of five years into the asylums of England and Wales 868 patients between the ages of 15 and 19, while those between 20 and 24 amounted to 1,586. Comparing these numbers with the whole population according to the census of 1891, we learn that the percentage of those of the ages of 15 to 19 was 2.9, while that of the ages 20 to 24 was 6.0, that is, the proportion had more than doubled. And it is reasonable that this should be so. The young man and young woman have ceased to be boy and girl; they are preparing to take their places in the world, to earn a posi-

tion or a name. They are attracted towards one another, and sexual feelings play their part, and love with its hopes, fears, and disappointments. Disappointment in many shapes awaits them. Some do not gain the position they covet in school or college. They fail in examinations after long study, and this especially to girls is very trying. Boys fail to enter the army, and this may mean the giving up a career on which they have set their hearts.

Over-study and contemplation of religion and religious subjects also play an important part in the production of insanity at this age, for they tend to foster the egoism and self-introspection which is a constant symptom of the disease, and whether they are led to think themselves better than other people and are turned into young Pharisees, or worse, when they imagine themselves to be sinful and desperately wicked, the end is the same, the egoism or egomania of the insane. Of the 1,586 patients enumerated in the commissioners' report, 1,356 were single, so that to a great extent we can eliminate such causes as those connected with child-bearing. Why, then, should six per cent. of the population become insane at the time of their full development and entrance into life? Here, as in the earlier period of life, hereditary predisposition plays its ever important part. Many of those who break down have had no disappointments, no love affairs, no religious excitement; yet between twenty and twenty-five without assignable cause, or after something of perhaps a trivial character, an attack of insanity is manifested. The hereditary history is carefully concealed and denied, for parents are loth to admit it, often on account of other children, and statistics are therefore valueless. The bringing up of such children has much to answer for; fathers who are not insane but crotchetty and exacting, may tyrannize over a nervous boy, compelling an overstrict obedience and enforcing it even with a horsewhip. Mothers may be ultra-religious, balls and theatres are prohibited as ungodly, Sunday is to be devoted to going to church and reading devotional works, and recreation of all kinds is cut down to the lowest point. Can we be surprised if the result is mental disturbance?

The symptoms of the insanity met with at this period are those of excited mania, noisy, often hilarious, not endangering life, and often marked in women by erotic ideas and language. This runs its course in a few months, often interrupted by relapses, but generally terminating in recovery. The prognosis therefore of this typical insanity is decidedly favorable. Recovery, however, takes place far more frequently and certainly in females than in males, and in my own experience I have found more young men remaining in the asylum as a chronic residuum than young women. The insanity here has not

been of the typical kind. It has been melancholic depression instead of excited mania or the hypochondriacal egoism of the masturbator. I believe almost all the young men who are left as chronic patients are the victims of this habit. They are not all melancholic. Some display conceit and swagger, and set defiance to their parents and all about them. There may be some acute symptoms and these will subside, and friends hope that recovery will follow. The patient gets well enough to leave the asylum and goes to some intermediate place for change, but his weak mind is too much damaged for perfect recovery, and he returns to drift into hopeless dementia.

I have not found masturbation such a prevailing habit in young women, but a symptom constantly met with in them is amenorrhœa, and this the friends will look upon as the cause of the mental attack, and will expect us to direct our attention chiefly to it, and to employ every kind of remedy they have ever heard of to remove it. Examination, however, of the history of such patients will tell us that the amenorrhœa is due to the general anæmic state of the individual, a state which may have existed for some time before any mental disturbance, which latter has been a sequel not of the amenorrhœa, but of the condition which has brought about the amenorrhœa. From the same cause the catamenia may never have appeared at all, but good feeding and suitable tonics will improve the health and cause the appearance or reappearance of the menstrual flow. When it does not come on, the mental symptoms will generally undergo an exaggeration at times corresponding to the monthly periods, and this will support the theory of the friends as to the connection between the two. It is to be noted that the terminations of the insanity and the amenorrhœa do not always coincide. The catamenia may appear and there is great rejoicing and relatives now think that surely the mind will recover, but this does not always happen. A young lady now under care had for three years amenorrhœa, she being in a melancholic state with refusal of food; at the end of that time the menses appeared and have continued regularly since, and she is now well nourished, but there has been no alteration in her mental state. She still requires to be fed, and will not occupy herself in any way. On the other hand, I have known the mind recover before the menstrual derangement terminated. Anything like local treatment or local examinations are greatly to be deprecated. It is not likely that anything will be found requiring local applications, and incalculable harm may be done and delusions of various kinds set up.

Insanity at the Climacteric Period.

As the advent of puberty brings about a great change in a girl, so the climacteric period and menopause may cause in some women a commotion in the nervous system from the withdrawal of the function which has so long played an important part in the life of the individual. All authors speak of a "climacteric insanity," and the popular belief assigns to all mental disturbance occurring at about that time the "change of life," as a cause. But like many others which are popularly looked upon as causes of insanity, this requires very close examination before we can assign it its proper position in our etiological table. As thousands of women pass through the pains and perils of childbirth without breaking down in their minds, so even more encounter the menopause without nervous disturbance. But when there are symptoms of insanity at about this age, it is so easy to assign the change of life as the cause, and so convenient to pass over inherited tendency, or the cares of a bad husband or troublesome family, the pinch of poverty, or alcoholic indulgence. And it is curious that the same popular belief which assigns the change of life as the cause of all mental disorder at the climacteric period, constantly leads people to hope and believe that this same change of life will be the cure of all the nervous and mental trouble which precedes it.

Bevan Lewis mentions the great disparity in the estimates of different writers as to the number of cases to be classed as climacteric insanity, the difference of course arising from the want of unanimity of opinion as to what really constitutes the criterion of a so-called case of climacteric insanity. Eliminating a large proportion of cases occurring at this period of life, such as recurring cases and all forms which had not originated at this epoch, also cases of epilepsy, imbecility, and organic brain disease, he finds a residue of 80 out of 1,808 cases, or a percentage of 4.4 upon the admissions.

That this is a period of emotional instability we can readily understand. It is also one of commencing decline, the going down the hill of life, and therefore we find, as we should expect, that the symptoms are those of melancholia rather than mania, with suicidal tendency and all the ordinary delusions of the depressed. Melancholia is the prevailing insanity of this epoch, whether in men or women. From such we should expect them to recover; if we find not melancholia, but excited mania, the prognosis is less favorable. Here, as in other forms, hereditary predisposition plays an important part and may be the chief factor, though the time of life may aid the de-

velopment. Yet this does not make the prognosis hopeless. Bevan Lewis gives us a recovery rate of 48 per cent., and of the recovered patients only 4 relapsed, and in 3 of these a predisposition to insanity was indicated by a former attack in earlier life with strong hereditary taint. Of the whole number of cases 27.7 per cent. had a family predisposition and 38 per cent. had suffered from a previous mental attack.

I have found this insanity curable but tedious. If sufficient companions and attendants are to be had, an asylum is not necessary in the subacute cases, and change of scene and surroundings often does great good, but the suicidal tendency here, as in all melancholia, is to be ever borne in mind.

Senile Insanity.

The insanity of the aged is generally associated in our minds with dementia, senile dementia, or senility, the last stage of mental decay and degeneration. But in looking through my notes of the cases of old people, above the age of sixty, I find that by far the largest number are recorded as those of melancholia, a number much exceeding those of dementia, while a smaller proportion may be described as mania. The last were for the most part patients whose symptoms denoted that which may be called "moral insanity," one old gentleman giving way to gross immorality, consorting with loose women and behaving in a way the opposite of all his former life, another squandering money in a reckless manner, going to the Derby by himself and ordering articles at shops far beyond his means, for which he had not the slightest use. I have found such mania subside under restraint and treatment, but it has been the precursor of the dementia which is so commonly seen and for which there is no cure. The storm of excitement which the unstable brain goes through in the maniacal condition proves too much for its strength; there is improvement, but weakening follows. The nearest approach to recovery which I have seen was in the case of an old lady of seventy-five who appeared to be in a hopeless state of dementia, and did not know that she was in her own house. Being unmanageable there, she was removed to an asylum, and for some weeks was in a state of mania with hallucinations and delusions of many kinds. She then somewhat rapidly improved and became perfectly clear in her mind and memory, and went back to her old home in less than three months "recovered." I have since heard, however, that the ordinary state of senile dementia has supervened, as was to be expected. Dr. Clouston gives an account of 203 cases of senile insanity, excluding

101 others which were cases of epilepsy, mania, or dementia of long standing. The age was from sixty to ninety years, and of these 203 persons 72 were discharged "recovered," "that is, in all of them their worst mental symptoms disappeared, they passing into normal senility. In many cases they became quite well in an absolute sense." And the latter, we read, were melancholic patients, and here we have another instance of the great tendency to recovery which we find in melancholia, especially in those of advanced age. The young do not recover in the same degree, it is not the insanity peculiar to them; but in elderly people the nervous depression and want of force do not appear to proceed from any organic brain change, and if the bodily health and strength are renewed, mental restoration follows. In the other forms of senile insanity, or as a sequence to them, dementia makes its appearance, the first symptom being usually loss of memory for recent events. This varies much from the inability to recall names, which is not uncommon in sane and younger people, to total forgetfulness of what happened a week, a day, or an hour ago. It may vary also on different days or at different times of the day. It may be slight, not rendering the patient incapable of taking care of himself, or severe, making it impossible for him to do so. Recent events make no impression on the fading structures of the brain. All the last acquisitions are gone, but those that were organized and stored away long ago remain vivid, and few dements there are who cannot talk about the bright days of their boyhood or the period of successful work. And this is explained by what we discover after death. Dr. Clouston tells us as the result of fifty-two post-mortem examinations that the most common lesion was a softening, localized and not very extensive, depending on a deprivation of blood from some obstructed vessel. The next was marked atrophy of the whole brain or considerable portions of its convolutional surface. Microscopic aneurysms and apoplexies were frequent, and explain the occurrence of transient attacks of hemiplegia, while degeneration of the cells and enlargement of the perivascular canals with dilated ventricles are part of the process.

MORBID ANATOMY.

There appears to be little to account for death when we examine the head of a patient who has died in an attack of acute insanity. A man becomes maniacal, his mania passes into violent delirium, and in the delirium and of the delirium he dies perhaps in a week. There may have been no bodily disease or complication and no assignable cause; the case may be called genuine "idiopathic" mania. But

when we open the head we find but little to account for death. We do not see such disease as we find in the lungs when death follows pneumonia, or in the abdomen after peritonitis. There seems hardly enough to have caused the death of a strong and healthy man so speedily. Yet what we do see points to the great storm that has raged there during the last week or fortnight of life—a storm that has brought about death by its violence, though at first sight its traces may seem to be few.

To take first the naked-eye appearances. There are signs of violent vascular disturbance in the meninges, the vehicles of the blood supply of the grey matter. "Sinuses and veins of pia mater full of blood—considerable effusion in subarachnoid space." This was in a woman who died of mania in fourteen days. "Pia mater much congested, arachnoid slightly opalescent." This also was in a woman, and such opacity of the arachnoid, though not uncommon, denotes in these cases excessive overaction. So violent may this have been that not infrequently we see effusions of blood from the rupture of small vessels between the membranes. There will also be found much serous effusion which accounts for the coma that in so many patients precedes death. When we remove the pia, and this in a recent case can generally be accomplished without difficulty, there are the same traces of violent action. The brain is discolored in places and not of uniform tint, and signs of congestion are numerous. Dr. Clouston gives a plate of the appearance on section of the anterior lobe of a patient who died of the exhaustion of acute mania. It shows the congested grey substance of the convolutions, congested white substance near the grey matter, and an inner ring of still more intense congestion along the line of junction of the grey and white matter, extending into the latter. There are also limited vasomotor areas of congestion in the white substance.

Such phenomena may be found in the brain of a patient dying in a first attack of acute insanity. But the vast majority of brains of insane persons which come under observation are not of those who die in the first attack but who have had repeated attacks, or die in a state of general paralysis or chronic insanity. They have been subjected to repeated congestions, the result of overaction, or to chronic hyperæmia leading to textural change. It matters little whether we call this condition one of inflammation or not. Pathologists may differ in opinion, but whether the cause be overstimulation or a depressing influence, there will have been a local hyperæmia leading to textural change, a change from higher to lower structure, an overgrowth of less complex and less highly organized material. We do not generally find increased vascularity except in cases of very acute mania or

general paralysis. As Bevan Lewis says (*op. cit.*, p. 448), "by far the larger number of cases afford evidence of poverty of blood in the brain and general malnutrition. Uniform pallor prevailed as a noteworthy feature in 841 cases out of a total of 1,565 autopsies, or considerably over one-half (53.7 per cent.)."

All the structures of the head may present alterations. The bones of the skull-cap may be thickened and yet light in weight from an increase of the diploë. This is not frequent; far oftener do we find them increased in thickness and density with rarefaction of the diploë, and adhesion of the dura mater, the periosteum of the calvaria. This is due to the constant hyperæmia which has occurred, "the result of repeated vascular engorgements and the excess of nutritive plasma brought to these parts by conditions of violent cerebral excitement occurring through a period of many years of chronic insanity. The thickened dense skull-cap is frequent in epileptic subjects and in chronic dementia" (Bevan Lewis). There may also be a thickening of the inner table with deep grooving and hyperostosis. This is disposed over the whole of the vertex, but chiefly in the frontal and occipital regions, especially the former.

On the contrary the condition may be one in which the bones are extremely dense and not thickened but thinned; sometimes they may be reduced both in thickness and density. These changes are usually found in connection with senile atrophy.

In a large number of cases the removal of the skull-cap is impeded by adhesions of the dura mater. Bevan Lewis speaks of twenty per cent. as the number, but Batty Tuke gives the proportion as much greater and says that he observed this condition in one hundred and nine autopsies out of three hundred, and this, notwithstanding that in Scotland general paralysis is less common than in England. Occasionally the adhesion extends over the whole vault, but more frequently it is found to be localized along the course of the coronal suture or beneath the frontal protuberances. It is also seen in the sagittal line and under the parietal eminences. The dura mater itself is seldom thickened, except where it is adherent to the bone, and is still more rarely adherent to the arachnoid and subjacent tissues. This, Bevan Lewis states, is another indication of his position that the inner smooth surface of the dura mater is not a parietal layer of the arachnoid, but an epithelial layer of the dura. It was thought that the so-called arachnoid cysts, so frequently found between the dura and arachnoid, were the product of inflammation and that the inner surface of the dura was a true serous surface, a reflection of the arachnoid, giving rise to these inflammatory exudates. The theory of inflammation, though still put forward by Ziegler and

others, is very doubtful, and it is more probable that such cysts and hemorrhages arise from loss of support, owing to atrophy of the convolutions, together with congestion of the meningeal vessels, leading to rupture. That we find adhesions of the clot to the inner side of the dura does not prove that there is a primary inflammation. The irritation of the clot may cause a partial organization and adhesion, but this is seen only in a few cases. According to Bevan Lewis, who in this follows Axel Key and Retzius, we find covering the brain (*a*) dura mater; (*b*) subdural space, formerly the "arachnoid sac"; (*c*) arachnoid; (*d*) subarachnoid cavity; (*e*) pia mater; (*f*) epicerebral space.

The extravasations I have mentioned are not uncommon and, as might be expected, are frequently found in general paralytics when there has in life been great mental excitement. They vary much in appearance; there may be a slight rusty staining over a patch of the inner surface of the dura, or it may be an extravasation flattening the convolutions and inducing considerable atrophy. Bevan Lewis quotes Rokitansky's description of one of these cysts. "Its adhesion with the dura mater is loose; it partly sticks on and partly is connected with the membrane by a few small vessels. Both walls of the sac are usually of a brown, rusty color, and tenacious. They may often be separated into several layers which vary in thickness, the inner of which are more thin; at the margin of the sac they coalesce and form one lamina, which soon becomes reduced to a thin, brown, rusty colored membrane, and spreading out further on the cranial vault reaches to the base, and at length terminates in a thin, rusty colored, gauze-like film. Within, the sac contains a more or less thick fluid of a dark and varying color, like chocolate, plum sauce, rust, or yeast. In course of time the lymph is gradually removed, the inner surface of the sac becomes smooth and polished, and the contents are changed into a colorless, thin, clear, serous fluid."

These formations are not, according to Bevan Lewis, the result of inflammatory action, for (1) the cyst is readily removable, being slightly or not at all adherent to the dura mater; (2) in the majority of cases there is no evidence of a pachymeningitis; the dura is not thickened, softened, or vascular and no organic connection exists between the two; (3) in the early stages the characters are purely those of a simple extravasation of blood into the arachnoid cavity (subdural space). With this opinion that subdural membrane formation is not the result of inflammation Middlemass and Robertson coincide.[30] They think, however, that these membranes are due primarily to "a hyaline degeneration of the vessels and their perivascular canals leading to an obliteration of both. While the vessels

are undergoing this morbid change, small hemorrhages frequently occur from them. Their obliteration is followed by the formation of new capillaries required to maintain the nutrition of the fibrous tissue. From these new vessels, the formation of which is necessarily accompanied by the development of a certain amount of granulation tissue, further minute hemorrhages occur. The extravasated blood becomes the basis of more granulation tissue. These changes are at first subendothelial, but the extending granulation tissue soon breaks its way through this barrier, and a membrane becomes developed, and by a continuation of the morbid process gradually increases in thickness." These degenerative changes, they suggest, are due to the morbid energizing of the brain, which is reflected upon the surrounding non-nervous tissues in a marked nutritional disturbance to which the capillary degeneration may be due.

A milky or clouded appearance of the arachnoid may often be seen not only in the insane but also in the sane. It occurs, however, much more frequently in the former, in fact it is the exception to find the arachnoid and pia (pia-arachnoid or arachno-pia, as it is named by some) retaining their delicate and transparent structure in those who have died insane. This opacity and thickening was also examined by Middlemass and Robertson, who do not look upon it as a result of chronic inflammation, but as depending also on an abnormal trophic condition. They attach great importance to the introduction of morbid products from the subjacent brain by the cerebral lymphatics into the arachnoid fluid, and think that the milky and thickened pia-arachnoid of the insane is due to an endothelial proliferation and degeneration and a connective-tissue overgrowth caused by the abnormal, and perhaps in some degree, irritative qualities of the arachnoid fluid.[31]

There are found often in the arachnoid of the cord, but occasionally also in that of the brain, certain bony growths of which the same writers give this account: "They result from a change which occurs in the condensed connective tissue which constitutes an arachnoid opacity. The fibrils swell up into a hyaline material, which, however, usually retains some trace of the striation of the original structure. The sponge-like form which is frequently found is probably the mere accident of the original arrangement of the denser strands of fibrous tissue. This sponge-like structure has a somewhat close resemblance to that which is produced by the process of intramembranous bone development, as is observable in the flat bones of a child's skull. Hence, probably, these structures may be regarded as of an osteoid character, as is maintained by Virchow."

All who have had to make post-mortem examinations of the in-

sane are familiar with the adhesions of the pia mater and brain substance which exist in upwards of thirty per cent., the majority being cases of general paralysis. "On attempting to strip off a portion of adherent membrane, there are seen by the naked eye numerous tough fibrous prolongations which look like enlarged blood-vessels, connecting the under surface of the pia with the cortex of the brain. When forcibly removed, the upper layers peel away to varying depths upon the pia, leaving an eroded surface, the base of which is punctated by large, open orifices from which coarse vessels have been withdrawn. Adhesions of some age exhibit a coarse, dense, fibrillar connection between pia and cortex; the normally delicate retiform aspect of the neuroglia is lost in the coarse fibrillation which has ensued. In earlier stages the appearance is suggestive of inflammatory implication, in the distinctly pinkish appearance of the cortex, sometimes diffused, sometimes limited to the areas of recent adhesions; the pia is thickened and tumid, the seat of nuclear proliferation, its vessels deeply engorged, and the superadjacent arachnoid also thickened, opaque, and œdematous. The distended vessels are coarse and tortuous, their sheaths thickened by multiplication of their cells, and the traversing of their structure by wandering leucocytes." [32]

Brain Substance.—In the acute forms of insanity there are often found after death patches of bright red mottling, defining the limits of certain vascular tracts or plexuses. This, according to Bevan Lewis, may depend on the smaller arterioles having failed to empty themselves into the venous system, the failure to contract being due to the paretic state of the vessel. The junctions of the white and grey matter, and also the fourth layer, are usually the sites of such discoloration. Although general inflammation of the brain substance is not met with among the insane, yet localized patches are not uncommon, due to an embolus or thrombus, to hemorrhagic foci, or new growths as tubercle or carcinoma. These may be surrounded by a zone of red inflammatory softening and beyond that a non-inflammatory zone of white or yellow softening. The cerebral tissue involved is swollen, œdematous, and variable in consistence up to an extreme degree of diffluence. It is usually of bright pink hue with streaky or punctated hemorrhages scattered through it; sometimes it will show no discoloration, but presents a quantity of inflammatory exudates, compound granule cells, nuclei, leucocytes, broken-down nerve structures, and pigment. Besides these localized inflammations we have the general chronic inflammation of brain and membranes, known as general paralysis (*q. v.*). Here the inflammatory activity is most marked in the frontal regions in both hemispheres, and less so in the parietal, while the occipital gyri almost invariably escape. The cortex is

much thinned in the frontoparietal region, and of very variable color, ranging from pinkish discolorations and congested patches to a pale or dirty gray. The arterioles of the cortex are coarse and engorged, and the substance is reduced in consistence, softened, and œdematous.

Softening.—Bevan Lewis mentions that out of 853 patients dying insane, 390 afforded instances of an increased consistence of brain, while 463 were noted as having a diminished consistence throughout. "The general diminution in cerebral consistence may be due to œdema of its texture, to disintegration of structure from the fatty degeneration of senility, or from extensive vascular disease restricting its nutrient supply, or it may be the result of inflammatory processes. In all cases the vascular system is largely involved. The œdema is first established by the undue engorgement of vessels which thus relieve themselves; the fatty disintegration of senile brain is invariably associated with, and greatly furthered by, diseased arterial tunics; and lastly, the inflammatory processes, which are of a chronic diffuse nature, are themselves vascular in their origin. Hence we see how large a section of the insane show indications of defective nutrition in the central nervous system, and derangements of its blood supply; yet acute or recent insanity affords few and far less pronounced signs of such impairment. It is in the chronic state of insanity that obvious structural changes indicate to us the serious nature of the nutritive failure. In instances of general reduction in the consistence of the brain, the organ fails on removal to maintain its erect position. It falls apart at the commissural junctions, the diverging hemispheres tending by the mere effect of gravity to tear the latter asunder, especially as these commissures are themselves unduly soft. The hemispheres have lost their plump contour, the convolutions may have undergone considerable atrophy, and their widely gaping sulci may enclose much serous fluid, while the whole brain feels flabby to the touch and devoid of its normal compact aspect, as well as of the firm and resilient feel of healthy structure." Considerable serous fluid distends the ventricles whose macerated walls are undergoing rapid solutions of continuity. The white substance appears glairy, is softened in texture, and pits on pressure; or it may have a dull, lack-lustre surface, mottled with diffused congested zones, stained with hæmatin, and presenting numerous coarse vessels. In extreme cases the brain substance may be completely diffluent here and there, the area of supply of the middle cerebral artery being far the most frequently affected.

Atrophy.—In many cases this must be looked upon as a sequel to the acute forms of insanity. In the chronic stage it is seen to invade

the grey and white medullated structures to an extensive degree. "It may be general," says Bevan Lewis, "throughout the cerebral hemispheres, while the basal ganglia and mesencephalon escape implication; but occasionally the whole of the intracranial ganglia are involved. On the other hand, it may be localized or partial, when it may implicate any region of the brain. It may be rapidly induced as the result of an inflammatory process, or may be of extremely slow and insidious progress, or the steady progressive dissolution implicating the whole cerebrum, which distinguishes the atrophy of premature senility. The intimate structure of the central nervous system would indicate peculiar relationships as established between the individual elements, which must be fully recognized ere we clearly see the significance of these forms of atrophic change. The more highly differentiated the structural parts of a tissue become the more dependent also do they mutually become. The nerve cell is dependent upon the terminal artery for a due supply of its nutrient plasma; the artery, in turn, is regulated as to its calibre by the functional activity of the nerve cell; the lymph connective system of the neuroglia is stimulated to renewed activity by the accumulating products of nerve disintegration; the nervous elements depend upon this continuous removal of effete material for their normal storage and discharge of energy, and so in like manner the connective and vascular elements are mutually dependent. In no organ of the body is this mutual dependence of parts so exquisitely elaborated as in the brain and, *a fortiori*, the cerebral cortex."

It often becomes a question, says the same author, whether changes observed in the nerve cells are evidence of primary implications, or whether they are secondarily induced through a disturbance in the circulation of the district, or impairment of the lymphatic functions of the cortex, or other cause. "There is every reason to believe that in the nervous centres both parenchymatous and interstitial change may occur as the primary fact; that the nerve cell may be stamped with a morbid instability wholly independent of any *ab extra* agency, and this as an inherited or acquired condition; nor is it unreasonable to suppose that the changes in the nerve cell in *physiological* senescence are initiated apart from any nutritive anomalies and vascular changes, being simply the expression of the expiration of its fixed term of existence. The very general atrophy of the cerebral cortex occurring in pathological senescence is often, but by no means invariably, associated with a degeneration of its nutrient vessels, and when these vessels are involved, it is to a very varying degree. Yet what is invariably found is the degeneration of the nerve cells which in any appreciable degree of atrophy are extensively

implicated. We have here, in fact, what may be regarded as a true parenchymatous degeneration, the primary change being initiated in the nerve cell. Other forms of atrophy, usually more limited in distribution, occur as the result of *overaction* of nervous centres; in such cases the element which chiefly assumes the morbid rôle is the connective matrix, or neuroglia, although the primary incident was undoubtedly nervous. Illustrations are afforded in the case of alcoholism in which repeated overstimulation of nervous elements, and the waste and effete material so produced, demand from the lymph connective system more than its capabilities can accomplish; the result is a temporary hypertrophy of this tissue, the multiplication of its active elements (phagocytes) followed by their fibrillation and the eventual atrophy due to the encroachments of the connective upon the nervous elements. In cases of epileptic insanity again, overaction leads to degeneration and atrophy of nerve cells through the medium of an encroaching connective. The conditions of the epileptic, however, are by no means parallel to the alcoholic, and we find that in lieu of actual atrophy of the brain mass there is often hypertrophy and augmented density due to the inordinate growth of the connective element."

Nerve Cells.—The chief morbid appearances which the nerve cells present are those of granular and pigmentary degeneration. In the former the whole cell, according to Bevan Lewis, becomes swollen, the cell protoplasm is clouded and obscured by the formation of granules within, the nucleus often retires before the degenerating mass and becomes atrophied and shrunken. The lateral processes become attenuated, dwindle and disappear, the apical process disintegrates, the basal extension remaining but often swollen and prominent. Many of the smaller cells become mere heaps of granules, the whole of the field around being the seat of much fatty granular matter, especially round the blood-vessels. The early stage of granular disintegration of the cortical nerve cells is signalized by certain remarkable features in the peripheral zone of the cortex immediately beneath the pia mater. The medullated fibres running parallel to the surface assume an extreme degree of varicosity, the spider cells of the lymph connective system proliferate, and we see here in this layer of the cortex the so-called colloid degeneration which we find existing in the medulla and elsewhere. This appearance is found in senile dementia, and Major was the first to point out that a primary senile atrophy of the brain cells occurs in this disease. Pigmentary degeneration, that is, excessive pigmentation, is especially found in the insanity of epilepsy and general paralysis. It is an evidence of a bygone functional hyperactivity, and is well seen in the large ganglionic cells

of the cortex. The changes which occur are thus enumerated by Bevan Lewis. First, there is a period of overactivity, during which the cell appears swollen with increase of pigment. There is a dark staining of the protoplasm, nucleus, and branches, and the pigmented area appears to be separated from the remaining protoplasm of the cell by a well-defined wall or cincture. Then there is a period of diminished activity when the nucleus is deformed and fatty, and the processes are few and faintly stained, while in the last or period of absorption there is fatty transformation and decoloration of the cell, then atrophy with shrinking or ruptureinto a heap of granules (*op. cit.*, p. 476).

Bevan Lewis also describes another morbid appearance of the nerve cells due to arrest of development, and found in the subjects of epileptic idiocy. At an early phase of its life the cortical nerve cell is of spheroidal contour, its basal process is non-medullated, and the cell itself is possessed of extremely few processes. They are utterly unlike the form ultimately assumed in the fully developed stage, and when found at a late period of life they point to an arrest of development. The contents are sometimes granular throughout, not in one part only, and usually pigmented. The nucleus is eccentric, and the paucity of branches is very notable. This appearance of the cells is chiefly found in the second and third layers. Such competent observers as Major[33] and Hutchison[34] have discovered morbid appearances in the brain cells of the sane, the changes being chiefly in the large pyramidal cells of the deeper layers of the grey matter, and consisting mainly of pigmentary degeneration in various degrees from a mere increase of the normal amount to a complete destruction of the cell and its replacement by a heap of pigment granules.

Nerve Fibres.—In 1868 Batty Tuke and Rutherford described a morbid change as affecting the neuroglia or connective tissue called by them *miliary sclerosis*. This has been shown by Bevan Lewis to be a lesion not of the neuroglia but of the white matter of the brain, pons, medulla, and lateral columns of the cord. There may be seen in a section prepared in chromic acid a number of opaque spots irregularly distributed. When magnified by a low power they have a somewhat luminous pearly lustre and when magnified 250 and 800 diameters linear they are seen to consist of molecular material with a stroma of exceedingly delicate colorless fibrils.[35] The patches may be unilocular or multilocular, the former varying from $\frac{1}{2000}$ to $\frac{1}{8000}$ of an inch, the latter from $\frac{1}{500}$ to $\frac{1}{1000}$. Of these Bevan Lewis says that they may be due to an implication of a neighboring blood-vessel, by the exudation from the vessel inducing such swelling of the myelin as to rupture the delicate investing albuminous sheath, or possibly by a

direct action upon the latter. The patch undoubtedly consists of altered myelin exuded in droplets from the medullated tubes and coalescing more or less completely; in a large proportion disruption of the axis cylinder occurs.

Batty Tuke also described another lesion called by him *colloid degeneration*. "The colloid bodies appear as round or oval in form, having a distinct wall containing a clear, homogeneous, transparent, colorless plasm, and occasionally showing a small nucleus but no nucleolus. They appear first in the white matter next to the cortical substance, but as the disease advances they become diffused outwards and inwards. In extreme cases the appearance of sections containing them may best be compared to a slice of sago pudding, for they exist in such large numbers as almost completely to fill the field of the microscope, separated slightly from each other by a fine granular material." [36]

This "colloid" degeneration Bevan Lewis believes to be also, like the "miliary," a stage in the progress of a chronic degenerative affection of the medullated fibres of the central nervous system, an affection of most frequent occurrence in the brain of the insane. Whether it be taken to indicate a simple degenerative change, or one of chronic inflammatory irritation, the real origin of the affection is the severance of the fibre from its trophic cell. It is in the diseased state of the cortical nerve cells that we must seek in most cases for an explanation of this degeneration of the nerve fibres.

Neuroglia.—The connective tissue or neuroglia shares in the morbid process which takes place in various forms of insanity, particularly in general paralysis and chronic alcoholism. As degeneration of the higher elements of the brain proceeds, the cells of the lymph connective system (which Bevan Lewis calls scavenger cells) become highly developed. "The processes of the latter apply themselves to the nerve cells, and surround and embrace them closely. They multiply and throw out their protoplasmic extensions in all directions, tie down blood-vessels, draw the perivascular sheaths by their contraction out of their normal course, and the vessels themselves become contorted and drawn from their normal direction. These scavenger cells, however, have but a brief existence. They throw out innumerable fine processes, and as the fibrillar meshwork increases so the cell protoplasm, at whose expense they appear to be formed, dwindles down and eventually disappears. Hence we have a veritable substitution of fibrillar connective formed out of the effete material afforded by the atrophic nerve tissue—a genuine degradation of tissue."

Lesions of Blood-Vessels.—Batty Tuke in his lectures enumerates five morbid conditions of the vessels in the order of their inci-

dence: 1. Simple dilatation; 2. Exudate deposits; 3. Opacity and thickening of the hyaline membrane; 4. Dilatation of the retaining canal; 5. Hypertrophy of the muscular coats.

Dilatation may be observed in many patients, even when there is no thickening of the walls. It may be found in both recent and chronic cases, and is a necessary sequence of prolonged hyperæmic action. Major remarks that it is a condition most commonly present in general paralysis, and that it also characterizes the vessels seen in chronic brain wasting. Bevan Lewis says that in general paralysis the long, straight vessels of the cortex become enormously and unequally distended, showing numerous ampullæ or aneurysmal distentions, usually fusiform in character, their tunics corroded with nuclear proliferation. Similarly dilated vessels may also be seen in the white matter.

Morbid deposits are seen adhering to the walls of the vessels. These are hæmatoidin, which is found in the form of large amorphous masses of a dirty yellow material. This substance Tuke says he has generally found in small quantities on the vessels of most sane subjects, but in a manifestly less degree than in the insane; that in the non-insane subject it appears to depend to some extent on age, and more especially on the nature of the disease which has caused death. In fever cases, in which the insanity of delirium and coma had supervened, it is pretty well marked. Hæmatoidin may also be found in the form of crystals, especially at the bifurcations of vessels. Another morbid deposit, noticed by both Batty Tuke and Major, is a very fine molecular material found in the smallest capillaries, homogeneous in structure, sometimes of a slightly pale color, more frequently colorless, in many ways suggesting a fatty nature, though the presence of fat is not shown by chemical tests. Of this Major says that it is highly refractive and unaffected by carmine. Syphilomatous deposits are found around the walls of the cerebral arterioles, which, being converted into fibrous tissue, cause the transverse sections to appear greatly hypertrophied, and this may go on to almost complete occlusion of the vessels. Clouston gives the section of the brain of a man who had labored under syphilitic insanity, with slow arteritis affecting the anterior and part of the middle lobes of one hemisphere. Absorption of nearly all the white matter of the centre of these lobes had taken place, the grey matter of the convolutions being left intact and forming a wall round the fluid mass. The greater vascularity and vitality of the grey matter as compared with the white are thus illustrated, also the different sources of the blood supply of each.[37]

The hyaline membrane which is described as a prolongation in-

wards of the pia mater, forming the wall of the lymphatic spaces which exist around the vessels, becomes opaque and fibroid, instead of being transparent and hyaline. It may serve for the deposit of fatty granules and hæmatoidin, or may itself be puckered and thickened, and in this state may be traced with unusual distinctness.

The canals in which the vessels are contained, the so-called perivascular canals, are sometimes found dilated. "In chronic cases," says Batty Tuke, "more especially in epileptics and general paralytics, the transversely cut vessel is seen surrounded by a clear ring of unoccupied space, with radiating trabeculæ of connective tissue extending between the hyaline membrane and the cerebral substance. In extreme cases the cylinder has been found from four to six times the calibre of the contained vessel." These clear spaces are caused by the dilatation of the congested vessel which produces an expansion of the surrounding parts.

A thickening of the coats of the arteries was described by the late Dr. Sankey many years ago.[38] It may be due to hypertrophy of the muscular coat, the result of efforts to overcome obstructions in the ultimate capillaries. Bevan Lewis speaks of the invariable presence of a fair-sized blood-vessel—lying in direct contact with patches of the miliary sclerosis already described. He believes that the coats of the vessel are involved by extension in the morbid process, and thus unduly thickened, the perivascular nuclei have undergone great proliferation, the vessels are much contorted and very frequently occluded. Major also speaks of great proliferation of nuclei in the brain of one who died of chronic atrophy.

The "Insane Ear."

There is a morbid appearance frequently met with in asylums, not after death but during life, which has been called the "insane ear" or hæmatoma auris, or othæmatoma. Writers differ widely as to the pathology, the most diverse opinions being held as to the exact etiology, the presence or absence of preliminary tissue changes and the seat of the hemorrhage. The appearance is that of an effusion of blood or bloody serum between the cartilage of the ear and its perichondrium. It may develop gradually, commencing with marked swelling of the ear, and may be of the size of half a walnut to that of a hen's egg, occupying the helix, its most frequent starting-point, or involving the concha and the whole of the anterior surface of the ear, hiding its configuration, blocking the meatus, and projecting as a livid, plum-colored mass. On the other hand it may come on rapidly, almost suddenly, in a night, but in my experience this sudden onset

was due to a blow. I have seldom known it to burst, but there may be an oozing of serosanguineous fluid. After attaining its full development it begins gradually to shrink, and this shrinking will vary much according to the size of the swelling and the evacuation of the contents. There is almost invariably, if the tumor has been allowed to attain any size, a puckering or shrivelling of the ear which indicates what has happened. It occurs more frequently in the left than in the right ear, is found usually in general paralytics and those suffering from chronic mania and dementia, and is about four times as frequent in men as in women.

It is not, however, confined to the insane; it is seen in pugilists, wrestlers, football players (Farquharson found it in boys at Rugby), in any who are likely to receive injury in this region. For this reason some writers assert that it is due always to injury. In my experience I have met with "insane ears" which were undoubtedly the result of violence; in one case the patient fell out of bed, striking the ear; in another it followed the holding of the head necessitated by forcible feeding.

The pathology of the affection has recently been carefully investigated by W. Ford Robertson, who has published the result in the fourth volume of the Edinburgh Hospital reports. The changes which he noted are those of the cartilage cells, vacuolar degeneration with more or less marked shrinking of the nucleus, the whole cell ultimately breaking down and disappearing. Along with this there is a disintegration of the yellow elastic fibres which also disappear, and the result is that when the degenerated area is large the central portion liquefies, so that a cyst is formed, which comes ultimately to be filled with clear fluid. Some portion of it is usually in immediate connection with the perichondrium, from which, or occasionally perhaps from contiguous perforating arteries, vessels pass in, extending in time more or less completely round the wall. This is the most frequent condition. Sometimes the area may be replaced by vascular fibrous tissue if the diseased portion is small and connected directly with the perichondrium. "The hemorrhage takes place usually from the new vessels in the walls of a cyst formed by this degeneration, less commonly from the vessels of new tissue which replaces a portion of the cartilage independently of the formation of a cyst, and, though probably only very rarely, from those of the perichondrium which have been ruptured in consequence of fracture of the cartilage at a degenerated spot. Such new vessels are more liable to impairment of nutrition than the original vessels of the tissue, and when they rupture independently of traumatism it is owing to degenerated change."

Certain observers finding in these hæmatomata micro-organisms, have attributed to them the origin of the affection and have advocated an antiseptic treatment. In the same volume of reports there is a paper by D. A. Welsh, who dissents from this view and looks upon these organisms as accidental. These are his reasons: 1. The cases examined show that no single organism can be regarded as the cause since at least three different varieties have been found; 2. Organisms are by no means constantly present, there being a considerable proportion of cases, which, examined with all due care, give purely negative results; 3. Inoculation has failed to reproduce the condition, causing simply inflammation and suppuration; 4. The organisms discovered are all identical with well-known pyogenic forms which have never been found to produce any condition analogous to hæmatoma auris. It is not the presence of organisms that determines the formation of the hæmatoma, but it is hæmatoma that affords a subsequent nidus for the organism.

There seems to be no question that the best method of treatment is that recommended by the late Dr. Hearder, namely, painting at as early a period as possible the inner surface of the pinna with a blistering fluid. The contents are solidified, and the chance of deformity is minimized.

SYMPTOMS OF INSANITY.

The False Beliefs of the Insane.

When we examine the symptoms of insanity, we find that they may be resolved, speaking generally, into two classes, false beliefs and insane acts and conduct. If we study these false beliefs we meet with certain words which vary somewhat in meaning according as they are used by different authors, and therefore require a brief consideration. They are *delusion*, *illusion*, and *hallucination*.

A *delusion* I have elsewhere[39] defined as a false belief in some fact which personally concerns the patient, of the falsity of which he cannot be persuaded either by his own knowledge and experience, by the evidence of his senses, or by the demonstrations of others.

The word *illusion* is used in more ways than one. The common meaning is a false interpretation of a sensation actually perceived. A person sees a cloud in the sky and says it is a chariot, or hears a noise in the next house or the street, and imagines it to be a voice addressing him. Others, however, look upon an illusion as something identical with an hallucination, while some, as Prichard, use the word as the equivalent of delusion and substitute it for the latter.

Hallucinations are false perceptions of the senses, the eye, the ear,

the nose, and so on. The patient does not mistake something which he sees or hears for another thing. He hears sounds or voices when there is nothing to be heard, and sees objects in utter darkness. The sensation is entirely subjective and within his own head and not excited by anything external. But this he cannot be made to realize.

It will be sufficient if we examine the rise and nature of delusions and hallucinations, passing over illusions as a term the exact meaning of which has not yet been decided.

Delusions, it must be borne in mind, always concern the patient personally. Mistaken beliefs, beliefs in mesmerism, spiritualism, or ghosts, in such matters as spontaneous combustion or the thousand and one popular fallacies about health, these are not insane delusions, unless the person who holds them believes that they concern him, that he is being mesmerized or burnt, and must therefore act in some insane way, or otherwise carry out his belief in his conduct.

Here the self-consciousness, the rise of which is, as has been stated, such a distinguishing feature of all insanity, is prominently shown. The patient's self or the environment which relates to himself is the sole object of his thoughts.

Two things concerning delusions are tolerably certain. The first is that they arise from an alteration in the function of the mental centres of the brain and derive their character from it; secondly, that they are not the first symptoms of nerve disorder but must have been preceded by others, though we may not have had the opportunity of observing them. Inquiries may reveal that there has been noticed an alteration in the individual; the nights have been sleepless, he has complained of his head, the appetite has been impaired, the digestive apparatus has been disordered. He has been told probably that his liver is out of order and has been severely purged with little benefit. He is out of sorts, out of spirits, cannot attend to his work, or take any pleasure in his usual pursuits.

In many cases the patient feels and thinks that something is amiss with him, as indeed there is. His consciousness, however, of there being something wrong with his head and nervous system will vary much. He may be aware of it and seek our advice and assistance like any other patient, and yet may not believe what we tell him. He is more likely to be unconscious of his real condition and to attribute the feeling he experiences to external causes. According to the feeling and its degree and intensity, will be the nature of the cause to which he ascribes it and the means taken to get rid of it.

The defective condition of the nerve force and the reduction of the highest mental centres operate in a twofold manner. First, the lack of nervous energy brings about the feeling that something is very

much amiss; and, secondly, the health and healthy action of the highest centres are so reduced by the loss of nerve power that the patient is unable to see the absurdity or impossibility of the delusions which he creates to account for his ill feeling.

The feeling that something is wrong with his health is very apt to engender the idea in the patient that he has taken something in his food or his drink which has done him harm. This is in my opinion the commonest of all delusions and one which arises in a large number of the depressed cases. I have known it to be the only one in many patients whose malady has been of a transitory nature, and in whom it existed perhaps only for a day. It will vary very much from the notion that the cooking is bad or the utensil not clean, to that of arsenic or such poisons being given, and the individual either fears to take any or declares that he is suffering from the effects of that which he has eaten or drunk on a previous occasion. From the idea that his food is poisoned he proceeds to accuse some one of having done it, and thinks that the culprit is some servant or other in the house, or even his wife, or that it is some person known or unknown outside who is compassing his destruction or endeavoring to cause him sickness or pain. Such a delusion leads some to refuse food altogether, some will only eat eggs or such things as they think cannot be tampered with; others will eat nothing but what they have cooked themselves, or they will get some friend to taste first that which is set before them. It is often an awkward difficulty to face at the commencement of a mental illness, for food is refused on this account just at the time when it is very necessary that the patient should be well nourished, and at the same time it may be prejudicial to have to threaten or adopt forcible feeding, as it may intensify the fear that poisons will be administered; yet the forcible administration cannot be long delayed. The same feeling of there being something amiss may give rise to another set of ideas, the delusion that the sufferer has some loathsome disease; a man may imagine that he has syphilis or leprosy, a woman that she has cancer. Every description of hypochondriacal complaint may have such an origin, which may range from possible disorders to such delusions as that the head is made of brass, or the body full of electricity, or the inside burnt up by fire. And inasmuch as the majority of such people suffer from constipation, we are constantly told that their œsophagus or bowels are blocked so that nothing passes or can pass, and this is a frequent reason for refusing food.

Another very common delusion, arising from the same feeling of being ill or altered, is that every one is looking at the individual. This, like the last, will vary in degree; at one time he will merely think that passers-by look at him, then that they avoid him, then

that they deride and point at him and the cabmen and omnibus-men jeer at and mock him. For this reason he stays indoors and will not go out, and if he is not taken in hand and treated, this fear may last for years and make him an insane recluse or "hermit." In the same way all the newspapers write about him and all the mysterious advertisements and paragraphs refer to him. If he cannot fix the annoyance on any one he knows, he thinks the police or unknown conspirators are plotting against him, and that they can by occult or supernatural methods damage or worry him even from a long distance.

Another result of the feeling that something is amiss is the delusion common in men that their monetary affairs have gone wrong or are going wrong, and that ruin is before them and starvation awaits their family. This not being a question of health or of poison which cannot be demonstrated, but one of facts and figures, ought, one would imagine, to be easily disproved by a man of business or lawyer. But we do not find this to be so. Proof absolute and irrefragable, deeds, bankers' books, and ledgers do not shake the delusion one iota. Argument on the subject rather strengthens than dispels it, and we have in this a good confirmation of the definition I have given, for this delusion is one of the falsity of which a man cannot be persuaded by his own knowledge and experience, by the evidence of his senses, that is, by what he sees in black and white, or by the demonstrations of others, his advisers and friends. These patients when driven into a corner will point to some investment, perhaps of a trifling sum, the value of which has gone down somewhat in the share list, and on this account they will say they are ruined. One gentleman, miserly at all times, used to invest his income till he left himself scarcely enough for his current expenses. Then he became melancholic and declared he was ruined because he had only a small balance at his bank. His income was about $15,000.

Many, especially women, are low-spirited and troubled, not on account of their worldly wealth or bodily health, but by fears that they have been wicked, so wicked as to destroy their hope of salvation in the life to come. They set aside the consolations and promises of religion, accuse themselves of all manner of imaginary sins, attribute the death of relatives to their want of care and affection, or declare that they have committed the sin against the Holy Ghost. If actual demonstration fails to convince those who think they are beggars that their fears are delusions, we need not be surprised that the assurances of friends or spiritual advisers fail to convince these that they are not so desperately wicked. It is a popular belief that such religious delusions are very incurable. In point of fact they are not more incurable than other gloomy fancies, but melancholia being for

the most part a tedious disorder they may persist for a long time, and so give rise to the notion that patients are not likely to recover from them. They often occur, too, in persons of advanced life, at the climacteric or even later, and the progress of the disorder in these elderly people is likely to be slower than in the younger. But while writing this there comes to me the news of the perfect recovery of a young man of thirty-three years, after an attack of profound melancholia of three and a half years and the most gloomy forebodings of medical advisers and friends.

To go through the various ideas and fancies which arise from the altered and depressed condition of these patients would be an endless task. They may, speaking generally, be described as fears of some impending evil, this evil being one to which they are justly doomed on account of their sins, or which is to be unjustly inflicted upon them by the machinations of their enemies. Either form of the delusion may be a source of equal torment to the sufferer and equally difficult to deal with. There is, probably, no greater suffering for any one in this life than the torments which these melancholic people endure week after week and month after month. No bodily pain, not the agony of neuralgia or the gnawing of cancer, is to be compared with it. Our only consolation is that in the majority of cases it will pass away, though our assurance of this brings little or no relief to the present suffering. The prognosis is good in all except when the health is utterly broken down or some bodily disease stands in the way of recovery. And even here I have known the melancholic gloom lighten or pass away as the disease got worse and death approached.

This is not the place to discuss the treatment of melancholia, but the favorable prognosis above mentioned must be supplemented by one addition. All such patients are to be looked upon as suicidal and are to be guarded accordingly. In the newspapers, unfortunately almost daily, are to be read accounts of suicides of persons who, it may be learned even from the brief and meagre reports, were in this state of mental gloom, and might have been saved and cured had the friends possessed the courage to protect them during their illness. Thinking that they are doomed to some terrible ill and that life is insupportable, incapable of receiving any assurance or comfort, they try to shuffle off this mortal coil, and will certainly do so unless closely watched. And not only may they try to commit suicide, they may try to escape from wherever they are, even their own house, either in order to carry out a suicidal purpose or to get away from enemies and the punishments and tortures which they believe await them. The refusal of food which is so common in this form of insanity may arise not only from

the fear of poison being placed in it, a delusion which has been already mentioned, but also from a wish to put an end to life, a plan which sometimes succeeds if the friends postpone forcible feeding to too late a period.

As patients range from the extreme gloom of profound melancholia to the other end of the scale, the excited exaltation and foolish hilarity of the fatal disease which we term general paralysis, so will the delusions be tinged by the prevailing feeling and represent the ideas which are characteristic of it. Midway between these extremes we find a number of patients whose insanity and insane delusions are marked not so much by despondency as by anger, suspicion, fear, and anxiety. Men accuse their wives and wives their husbands of adultery; accusations of fraud and robbery are hurled against relatives, partners in business, employees, and servants; delusions of conspiracy are common, and the patient not infrequently appeals to the police for protection against his imaginary enemies. The ideas of suspicion may be carried to any length. Very common are the delusions about electricity being applied to the body by means of wires concealed in the walls or under the floors. One lady had the lightning conductor removed from her residence, and numbers of the floor boards taken up to look for the wires. The same lady had the delusion that people about her were able to ascertain her thoughts, even when they were a long way out of earshot. These delusions point to a condition of great nervous agitation and unrest. In the case of a delusion, such as the last mentioned, we have no difficulty in recognizing the insanity; but when the accusations are of a kind which may possibly be true, such as charges of adultery or fraud, there may be great difficulty in coming to a conclusion at a single interview if the parties are quite unknown to us. And yet many of these patients are very dangerous. Being in a state of anger and suspicion, they are not unlikely to attack the objects of their fancies or those who are charged with the care of them, whom they look upon as the emissaries of the former. Many a murder and suicide has been committed by men who, having a delusion about their wives' infidelity, have killed them first and themselves afterwards.

Lastly, we have delusions marked by exaltation, and these are always to be looked upon as very grave, for they characterize those who are suffering from general paralysis, and when a man between thirty and fifty-five years of age suddenly announces that he is a personage of great rank, wealth, or strength, we must consider the case to be one of great suspicion. On examination of such a man it may very likely happen that we find physical symptoms of paralysis and organic change that point to cerebral disorganization which has al-

ready begun and will advance slowly to death. Frequently, however, we see patients whose mental condition is one of exaltation, who think they are princes or dukes, or that they have invented something which is to yield them a large fortune; they may even think themselves the saviors of the world, yet may turn out to be not general paralytics, but simply persons with mental exaltation and ordinary mania. We must believe, however, that the pathological state of their brain is very nearly identical with that of the general paralytic, and that there is but the faintest line of demarcation between them. This agrees with what Bevan Lewis says, that the dissolution here is to a greater depth than in the melancholic. "An overaction on lower planes," as Hughlings Jackson would term the state to which we allude, "characterizes these maniacal states in the intellectual sphere, revealing a profound failure in object consciousness." The delusions will vary from mere boasting and self-assertion to the wildest fancies. There is intense happiness and satisfaction and the most profound conviction that the patient is right and every one else wrong. The prognosis is less favorable than in melancholia, especially if the delusions are not transient and changing, but fixed and permanent, when they are likely to become chronic monomania, and all such people, owing to their conceit, are difficult to manage without legal restraint.

Hallucinations.

Not only delusions but also hallucinations are constantly found in the insane, and require the most careful consideration because they are found in the sane also, and this will be raised as an objection whenever in a court of law we bring forward an hallucination as an evidence of insanity. It is quite true that they occur in the sane, but in my experience they occur when the sane person is out of health, and point to nervous disorder, though not necessarily to insanity. A case I have already mentioned is that of a lady well known to me who when out of health always saw a cat sitting on a particular stair of her house. She was not averse to cats nor afraid of the spectral cat, but it was to her a token that she was out of health; tonics and wine removed it, to return when next she fell into a like condition of weakness. Here there was no defect of eyesight, her visual centres and visual apparatus were in perfect order, and everything else in the phenomena of vision went on as usual, but the reduction of some portion or other of her brain caused this cat to appear. Why a cat? it will be asked. Why not a dog or a rat or a mouse? We are unable to say, for we know but little of the pathology of hallucinations. I have known a patient plagued by an hallucination of hearing in the

form of church bells which went on continually during the day. This person was not insane but was suffering from a high fever with a temperature of 105°. When the temperature declined the church bells ceased. She was able to realize that it was an hallucination because she knew that there was no church or building anywhere in the neighborhood whence the sound could emanate, but the annoyance was as great as if the bells had really been rung. This hearing of church bells is not uncommon in cases of fever, and, as is well known, deafness sometimes occurs in the same cases.

In the *Journal of Mental Science* (Vol. XXVII., 430) is a paper by Kandinsky, a Moscow physician, who was himself insane for two years and had hallucinations of all the senses except taste. In the first month of his illness there was no hallucination, but an irregular mental activity, a race of delusions and involuntary thoughts. The hallucinations began after the brain was exhausted by the rapidity of thought, and an anæmic condition was produced through voluntary abstinence from food. He agrees with Meynert that hallucinations are no proof of excitement of the cortex, but rather a proof of the abatement of its activity. This theory bears out my own observation of the two cases I have just enumerated.

The occasional hearing of a "voice" is sometimes the only symptom of insanity noticeable in a patient. I have known some recover apparently entirely from an acute attack, resume their places in society and attend to their business, and yet retain this remnant of disease. They may be able to recognize it as an hallucination and disregard it so long as they are in good health, but if this fails, then the "voice" torments them and may drive them to homicide or suicide. Now in these people all the apparatus of hearing, external and internal, and the centres of the brain concerned with this sense are in perfect order, able to receive all that comes to them and to store it up in memory, so that it is difficult to conceive that these centres can be diseased, or that the seat of the hallucination is the same as the healthily working organs. We are in truth in ignorance of the exact pathology of these symptoms, and the belief that they are due to disturbance of the highest cerebral centres has no more foundation than has the opinion of those who think them due to lesion of the external organs of sense, because hallucinations of sight are perceived by persons suffering from cataract or those of hearing by people who are deaf. Hallucinations must be closely allied to delusions because they correspond to the prevailing feeling of the sufferer, the gloomy man seeing sights and hearing voices which are in harmony with his mental condition at the particular time. And as the whole mind may be absorbed and overwhelmed by a mass of delusions, so may it be

overpowered by hallucinations and unable to pay attention to anything else.

The hallucinations of the insane which have to be considered are those of sight, hearing, taste, smell, touch, and the muscular sense. Sometimes two or even three of the senses are affected at the same time. Among the insane as observed in asylums those of hearing are the most common, those of sight coming next and being much more frequent than those of the other senses. But if we were to enumerate all the sick persons who suffer from them, those whose malady is delirium tremens, post-febrile mania, delirium of fevers and acute disease, and the delirium of young children, it is probable that the hallucinations of sight would equal if not exceed those of hearing, the latter belonging not to the very acute but to a later stage of the insanity.

Hallucinations of Sight.

These may be merely flashes of light, colors or fires, or objects, as faces or animals. The man with delirium tremens sees rats, snakes, or other creatures crawling about the room or bed, these being almost always in motion. The fever patient too picks imaginary objects from the bedclothes, and this is rightly held to be a sign of evil omen and impending death. In all these patients there is great brain exhaustion and often sleep has been absent for a long time. The hallucinations have manifestly a close connection with an exhausted and ill-nourished cerebrum. Refreshed and revived by sleep, it loses these terrifying phantasms, which vanish as the acute disorder subsides.

Those which we meet with in less acute cases are often visions of the supernatural, angels or devils, or the Deity, or birds or dogs. Sometimes patients declare that they have seen some friend or relative in the preceding night or day. One gentleman constantly declared that he saw me somewhere or other the day before, the whole being purely imaginary. His is a very chronic case, he having been upwards of fifty years in an asylum, and his delusions and hallucinations vary so that his medical superintendent tells me that he could write a fresh certificate for him every day. Old people see strange sights; one old lady of seventy-five declared that she saw in her bedroom one night her nurse confined of twins and that a Roman Catholic priest came and baptized them both, and to this she adhered for weeks but finally lost it and recovered.

It is sometimes very difficult to say whether certain false ideas are hallucinations of sight or delusions. A patient declares that I am some one else, not a person he has never seen but some one he knows, his father or his brother. There may be no resemblance between the two, but he persists in his assertion. We cannot say that this is an

hallucination or illusion of sight. It has nothing to do with the latter, but is a mistaken idea and is akin to the common delusion that the patient is not his real self but some one else. Frequently these persons declare that those who visit them are not the real husbands, brothers, or sisters, and yet at the same time they will ask questions about others at home, showing that the delusion is mental and not optical.

What is the prognosis as regards hallucinations of sight? Occurring as they do in the acute rather than the chronic stages of insanity, they are not of serious import, for with the acute state we expect them to depart and during this it is of little consequence what hallucinations are met with, if other symptoms are favorable and the strength is maintained. How little recovery is precluded by them we learn from the observation of delirium tremens. Where hallucinations of sight remain after the acute state has passed and the case has become chronic, we shall find, I think, that in the majority of instances other hallucinations exist also, especially those of hearing. That the prognosis here is very unfavorable is beyond question, but it depends more upon the mistakes of hearing than those of sight, and the history will decide for us whether it is a recent or a chronic case. These hallucinations constantly occur in the dark and are seen even by blind people, which proves that the external apparatus of vision is not the seat of the mischief; some by closing the eyelids or covering the eyes can prevent them. By association of ideas and by being accustomed to see nothing when the eyes are shut, they do not see the phantoms of their imagination.

Hallucinations of Hearing.

These are both the most common and the most important of all the perversions of the senses found among the insane. They are important because they are symptoms noticed not merely in the acute stage of the disorder when the patient is under care and treatment, but at a time when he may be thought by many to be recovered and fit to be set at liberty, important also because they are very difficult to eradicate, often very difficult to detect; and if they vanish, and we trust that the patient is well rid of them, they are apt to return without warning of any kind and make life a burden to the sufferer. These hallucinations are not specially confined to the acute state, as are most of those of sight, neither do they indicate the condition of nerve exhaustion with which we believe the latter are connected. Yet in my opinion they have their origin almost always in some acute or subacute attack, which may have long passed away and left these "voices" as a relic and uncured symptom.

Such an attack should always be suspected, for it may be argued, and probably will be urged in a court of law, that hallucinations occur in the sane and that the mere hearing of a "voice" does not constitute insanity. But if we can trace the origin of such hallucinations and refer them to an undoubted mental disorder, whether mania or melancholia, the nature will be disclosed and we shall be satisfied that they are insane fancies and the outcome of insanity.

The hallucinations in almost every case appear in the form of "voices," voices of invisible people speaking to or about the patient, and almost always in uncomplimentary terms. When I am told by any one that he or she hears people talking and I ask what is said, I hear that accusations are brought up of crimes of all kinds, frequently most horrible, or that suggestions, or even orders to commit such crimes, are communicated in this way. It is of no use to tell such a person that these sounds are imaginary and subjective and are all inside his head. The hearer thinks that they come from the next house, or if the house is detached, then from some one outside by means of wires, tubes, or telephones. They are so real that while we are talking to the patient we may see him start as he hears the voice, or break off what he is saying to listen and perhaps reply. And while conversing with a lady amicably and pleasantly I have seen her suddenly change countenance, and with an expression of fury rush at me or the attendant in obedience to a voice which she has just heard.

Obscure as is the pathology of insanity generally, no portion of it is so mysterious as that of hallucinations of hearing. I have a lady under my care at the present time who is rational, intelligent, well-read, well-behaved, who can sit at table behaving like any other sane person without a trace of any mental affection or eccentricity. Suddenly she will leave the table and go to her own room, and there she will shriek and execrate the "voices" and make a terrible noise for perhaps an hour, when she will come back and quietly join her companions. This noise occurs almost every night, lasting two or three hours, and occasionally in the daytime. She will not talk about it, though she is quite aware of the practice, and I do not know who it is whom she imagines to be persecuting her. She will not have any one in her room at night, and likes to have the door locked on the outside. Here may be quoted the words of Dr. Hyslop.[40] "When we reflect that a pathological state which would account for morbid influences determined centrally fails to alter, modify, or pervert in any way the normal functions determined from the periphery by external agents, we feel confused, and must confess that such pathology is for the present incomprehensible."

The difficulty in dealing with these voice-hearing patients is that often there are no other symptoms of insanity, and they appear but for this quite well. And yet with all the appearance of perfect mental health a "voice" suddenly calls out a filthy or opprobrious epithet and the hearer straightway shoots an unoffending bystander believed to be the utterer of the word. This happened not long ago in the streets of London. The difficulty in forming a diagnosis of this insanity lies in the apparent sanity of the patient in every other respect, and very often in the secrecy which is preserved with regard to the voices. It appears as if he was under some fear or some compact which keeps him from revealing the fact that he hears them, though he thinks he must implicitly obey their commands, and it may require very close watching and observation when he thinks himself alone and unheard to enable us to arrive at the true state of the case.

It is also at times difficult to say whether a false belief should be called a delusion or an hallucination. Thus a man may have an idea that he is slandered and his reputation taken away by known or unknown persons, and he may tell us in what he is slandered and how he is being wrongfully accused of theft, or fraud, or unnatural crime. And another may hear "voices" saying the same thing. Either is evidence of insanity, and shows marked mental aberration; but for the prognosis there is all the difference between the former—which is a mere delusion and a common one and will in all probability pass away—and the latter—which is an hallucination. This is more serious, and if it has lasted any time and is the outcome of a more acute state, it is a symptom of very unfavorable omen.

Who are the patients in whom we find these hallucinations? They are the young and middle-aged rather than the elderly. They are rare in climacteric melancholia and in fact in all melancholia, the delusions of which are numerous enough but are not complicated by hallucinations, and for this reason, perhaps, among others patients recover from melancholia even after many years. The cases in which they are common are those of the so-called "idiopathic" insanity, in which young people strongly predisposed at the age of adolescence break down and never emerge entirely from the mental disorder. They are more common in women than in men and are frequently found in connection with alcoholic excess, not delirium tremens, but insanity produced by long-continued tippling.

There is a class of patients who have hallucinations of hearing, yet do not hear voices but sounds. This is a less formidable disorder; we may have more hope of its disappearing, and if it does not, it renders the patient less unhappy and less dangerous to himself and others. The complaint is that noises are made in the next room or

the next house for the purpose of annoyance, or that blowpipes are constructed in the wall, under the floor or in the chimney, and that blowing or whistling goes on at all hours. The patient may be much tormented by it all and take various steps to prevent it, such as appealing to the police or the people next door, but this is a different state from that of the man who hears a voice commanding him to commit homicide or suicide and straightway obeys it. These "noises" may subside and disappear for years.

Hallucinations of Taste.

Many patients have fancies about food or medicine which may be called hallucinations of taste, but are more often of the nature of delusions. When they assert that poison is put in their food, it is not that they think they taste it, but, having the delusion that the food has been tampered with, they refuse to taste it at all. At the present time an elderly lady has the idea, and has had it for upwards of three years, that the meat provided for her is human flesh. In many respects she is rational and able to visit and travel, but to this idea she adheres, holding it just the same whether it is a leg of mutton, a fowl, or a rabbit. But she eats it all in spite of her fears. Another old lady while in an acute stage of melancholia thought that her food was mixed with excrement, but this passed away after two or three weeks; all this is the outcome of mental expectancy. Thinking that he is going to be made to take unwholesome food, the patient asserts that something or other nasty or poisonous is placed in it. Something may depend on the foulness or dryness of the tongue and disorder of the alimentary tract, but genuine hallucinations of taste are, I believe, rare.

Hallucinations of Smell.

Much the same may be said of hallucinations of smell that has been said of those of taste, though in my experience the former are more common, but it is very difficult to separate them from delusions. In melancholia the digestion is so disordered and the breath so fetid that the patients must frequently experience a foul taste in the mouth and a foul odor from the breath. Projecting this subjective sensation to some exterior and objective cause, they may assert that they perceive a smell of dead bodies or graves, or because they do not feel any inclination for food they will declare that it smells offensively. They seldom mention any pleasant odors, and it is generally melancholic people who complain. Many of them have the delusion that they are suffering from some loathsome disease, and as a result of this they imagine that they exhale an offensive odor, and object to sit on a stuffed chair or sofa lest they should contaminate it. These are de-

lusions of the melancholic condition and pass away as the patient recovers. I have never known an hallucination of smell remain as a solitary symptom in the way that we find the "voices" remain as hallucinations of hearing in persons otherwise recovered.

Tactile Hallucinations.

All manner of painful and neuralgic sensations may be experienced by the insane in the skin of the various parts of the body or in the viscera. Those who are not insane, but hypochondriacal or hysterical, come to us with endless complaints of nervous pains, and refer them to some ailment or other, or seek relief from quacks and advertised remedies. The insane put all such pains and sensations down to external causes. If they feel an itching or formication of the skin, they imagine it is due to vermin; if they have a pain in the head or arms or legs, they will declare that they have been knocked about by the attendants or their arms or legs twisted, and it is often difficult to convince both them and ourselves that this is all a delusion. In almost every case of acute mania in young women we find more or less sexual excitement, and this may give rise to what may be called hallucinations of their having been indecently assaulted or ravished. A patient of mine who suffered from alternating insanity used to declare in the maniacal attack that the female attendants were men and that she was assaulted by them every night. Dr. Clouston mentions a lady who had a chronic uterine tumor. She showed her insanity first by going to her clergyman and making a confidential report to him that her husband had given her syphilis. The uneasy sensations connected with the tumor had given rise to this idea. He also mentions a man with disease of the rectum who maintains that people come at night and commit an unnatural offence. And he remarks that bodily causes of delusions should always be looked for.

When a bodily cause, such as the above, is the origin of the hallucination or delusion, recovery is not likely to take place unless the cause is removed. Many have no bodily disease, but mere neuralgic cutaneous pain or sensation is enough to produce the fancy, and like all neuralgic pain it may be intermittent so that the delusion is not always discoverable. I have a chronic patient who complains at intervals that people come and "tick" her head. It is difficult to understand what she means by the "ticking," which appears to be some kind of tapping, not causing great pain but rather annoyance. She does not always experience it, but complains bitterly of the imaginary people who inflict it on her. She is rational in many respects and able to live with a family, and has no ailment or disease in any part of the body which can in any way have given rise to the

idea. One patient, who probably was cold, declared that the servants had put water in his bed; another whose head was hot asserted that pepper had been put in his pillow. All these subjective sensations are converted into accusations of one kind or another. They are of little consequence except to show the deluded state of the mind and the inability to understand their origin, but they are apt to be believed by the relatives or friends who think that these things have really been done.

Hallucinations of the Muscular Sense.

These are in some respects the most important of all, if we are to believe with many that through the muscular sense the impressions of accomplished muscular movements are conveyed to the brain, and that through it the acquisition and realization of speech is made. This is the view of Cramer, and with him Klinke agrees and believes that abnormal sensations in the tongue and throat may arouse delusive fancies leading to derangements of speech.[41] "The sense of sight," says Bevan Lewis,[42] "is pre-eminently interwoven with the muscular mechanism involved in our perception of objects," and further he tells us that "we must distinguish between that portion of the muscular element which enters into our higher intellectual concepts and that grosser factor of the large musculature of the limbs, etc., which subserves the purposes of locomotion and coarse movements." To examine the former would be to analyze the origin of almost every delusion, and this would be beyond our power, but the latter is that which presents to us the ordinary hallucinations and perversions of the muscular sense. These are such ideas as that the limbs are twisted or torn, that they are disjointed, that the legs are tortured or frozen or made of brass, and the like. Some may even think that they are paralyzed and cannot move at all, and the idea of galvanic shocks and currents may in the same way arise from pains in the limbs due to paralysis or alcohol. Hyslop thinks that "the general paralytics who say they have walked millions of miles, or who feel that they are treading on air, have probably some change in the sensibility of the articular surfaces, which act in reality as predisposing factors of illusory states. The sensations of flying through the air, of extreme buoyancy, or having leaden limbs, difficult movements, etc., may all be explained from this point of view. Those abnormal subjective sensations, however, in which the body or limbs appear to shrink or expand would be better explained as modifications of the cutaneous and general sensibility" (*op. cit.*, p. 286).

Dreams.—There is a great similarity between dreams and hallucinations—of the latter it may truly be said, "they are such stuff as

dreams are made of." When in good health our dreams are short and, making but little impression, are forgotten almost as soon as we wake. The mind is sound and deep sleep suspends its action altogether in all its parts, in thought as well as in the senses; but when sleep is not deep, and some cause or other from within or without the body disturbs our rest, then visions or sounds, like the hallucinations of sight and hearing, may arise in the half awake brain, and, according to the state induced, may be of a pleasant nature, or, on the contrary, may be frightful and tormenting. Like hallucinations they may grow out of the events we have been passing through, and may be so vivid and so real that we have some difficulty in realizing for a certain space of time that it has been a dream. Like hallucinations and delusions of the insane, dreams always concern the dreamer. We do not dream of other places and other people unless we ourselves are there to see or to hear. Almost all dreams involve the sense of hearing or seeing, rarely of smell or taste, and we know that the hallucinations of the two former are much more common than those of the two latter. The dream vanishes on waking. It may take a certain time to make sure that it has been a dream if ill health has caused it to be very vivid, and impaired the power of recognizing that it was only a dream. So the hallucination of the sane man is known and recognized as a passing and unreal thing. But the hallucination of the insane person and the vision of the dreamer while asleep are real, and are not recognized as impossible or absurd, because in neither is the whole of the mind working in a healthy and normal way. In sleep a portion only is at work. Judgment and comparison there is none. We are frightened by impossibilities, or not astonished at all at things equally absurd. And so in the insane the mind fails to appreciate the hallucination because the different portions of the mind do not work together, and comparison, perception, and judgment are out of joint.

The Acts of the Insane.

The delusions and hallucinations which have been called the false beliefs of the insane lead in the majority of cases to insane acts and conduct, and it is the latter which calls for the interference of authorities or relatives, according as the insane acts constitute a danger to society at large or to the individual himself. It is important to review the acts which most commonly follow the delusions, for the latter may often be discovered by the resulting conduct, even though they have been hitherto unsuspected. And acts which are not of themselves convincing evidence of insanity may become so by being explained or justified, according to the delusions or hallucinations of the individual.

Insane acts may be divided into those which affect the person and health of the patient or his property, and, secondly, those which are directed against others. Under the first may be considered such acts as stripping off clothes and refusal of food, fantastic dress, suicide, self-mutilation, habitual drinking, squandering, alienation, or destruction of property. Under the second may be placed homicide, wanton violence and mischief, arson, rape, unnatural offences, annoyance by postal cards, and many other similar iniquities.

Stripping off Clothes.—It is very common for the insane to strip off their clothes either entirely or in part. We are constantly told that a patient wanders about his or her house with scarcely any clothes on, to the scandal of friends and servants. This is often done without the slightest regard or any consciousness that it is indecent. The restlessness engendered by the disorder prompts the sufferer to leave his room, and the attention is too much absorbed by the thoughts which crowd the mind for him to dress in the accustomed clothing. "Clothed and in his right mind," denotes the sane man; the insane is often unclothed and in this state may wander not only about the house but into the street, and many a "wandering lunatic" has had to be covered by a policeman's great coat before he could be taken home.

Patients will wander about half dressed who are not in an acute state of insanity, but many who are suffering from acute mania or melancholia or the acute stage of general paralysis will strip off all clothing, or tear to pieces all that is put on them, either to get rid of the feeling of restraint or because of some heat of skin which clothes aggravate. Others, too, in another phase of the disorder will destroy everything in the shape of clothing as well as the bedding, sheets, and blankets from pure wanton love of destruction, just as they will smash windows or furniture. These patients do not in very many cases smash or tear owing to any delusion, but from an insane desire to destroy, and sometimes a restless craving for something on which to exercise their fingers, teeth, or nails. They will go on tearing till they have reduced the bedding or clothing to the smallest fragments, and I have seen a black cloth coat become a mass of shreds so that no one could possibly guess what it originally had been.

Others will take off their clothes through some delusion. Religious melancholics think they are bound to deprive themselves of them to give to those who are in want, or will think them too good to wear, or that they cannot afford them, or will say that it is their duty to mortify the flesh and expose themselves to cold for the same reason that so many refuse food. A lady lately under my care had the delusion that she was going to be turned out of her house to wander

about the streets naked all night, and this thought of being naked, though she dreaded it exceedingly, became such a dominant idea that she prepared for it every day by endeavoring to take off all her clothes in her own drawing-room, and nothing but the constant presence of an attendant prevented her from doing so. The delusion and endeavor passed off in about a week.

Demented patients will often take off or tear their clothes from the fidgety restlessness which characterizes some of them, especially those who suffer from periodical excitement. These are chronic patients, but with this exception our prognosis need not be unfavorably affected by this practice, which is seen for the most part in acute insanity, from which so many recover. Even those who in acute conscious mania destroy for the sake of destroying, will give up the habit if they are prevented from indulging in it for a time. The treatment must vary according to the case. An acutely delirious patient must not be allowed to go naked if the weather is cold. A suit of strong and tough material, made to lace up the back, must be placed on him or her, with an adequate supply of underclothing, and if the sewing is done with stout thread or twine it cannot be broken. Soft and warm boots must be placed on the feet, with locks to prevent their being removed. Another plan is to fasten a strong blanket round the neck and shoulders, making a kind of poncho, impeding, though not confining the arms, and enabling attendants to hold a patient without bruising. This is useful in very acute delirium when the patient's object is to get rid of clothes rather than to destroy them. In acute and conscious mania when the tearing is done for sheer wanton mischief, an attendant should be placed by the patient who shall absolutely prevent his practices, and the hands may even be fastened if the habit is persisted in. Such people know perfectly well that what they do is wrong, and are to be influenced by moral treatment and the withholding of any luxuries as wine, beer, or tobacco in which they delight. Even the demented are susceptible of this kind of moral treatment to a greater extent than many would give them credit for.

Indecent Exposure of the person is a practice indulged in by the insane, and as it is not confined to them but is also met with among the sane, it becomes a question of legal diagnosis, and requires careful investigation. Not infrequently is it the case that men expose themselves to children, and insanity may be pleaded as an excuse for the act. Such occurred not long ago in an elderly and weak-minded man given to drink. Here the unsoundness of mind was manifest, and the plea of irresponsibility was successfully raised. When the act is the result of insanity, it is not likely to be the only evidence of

mental disorder, and even the act itself and the locality may be sufficient to show its origin. For I have known a man who rarely transgressed in this way, but when he did, it was in the most public and crowded place, on board a steamboat or at a solemn function in a foreign cathedral. Women in a state of erotic excitement may do it, but not in public. In asylums it is not uncommon, but the insanity in such cases is shown in many ways, and self-abuse likewise is often carried on in a most shameless manner. I have known this practised by women who were not otherwise insane, and practised almost in public. With many it seems to be a most uncontrollable habit, and one extremely difficult to deal with.

Fantastic Dress.—From the stripping off of dress we may pass to the wearing of an inordinate quantity, to the decoration of the person by all kinds of fantastic ornaments, or the utter neglect of all cleanliness, both of person and clothes. All this may proceed from delusions directly, or may be merely the habits of a neglected lunatic who has been allowed to do what he likes, and has drifted into the carelessness of a hermit or recluse. Some people have an extraordinary fear of cold and will wear a huge pile of clothing without changing it, for fear of taking cold. One old lady had sewn round her body layer upon layer of flannel till she was encased in a complete pad, and this, of course, was never removed. And the same fear causes them to avoid water and washing, and so they will go month after month and year after year unwashed and unkempt. I lately saw a man, of the age of thirty-two, who on two occasions, twelve and fourteen years ago, had been under my care in an asylum, whence he had been removed uncured by a fond and foolish mother. Since that time I should think, judging by his appearance, he had not been washed, neither had his hair nor beard been cut. They hung over his shoulders, hiding his face, and altogether he presented the most extraordinary appearance; the state of the room in which he lived corresponded with that of his person. This was an extreme case, but there are many patients whose dress and appearance are eccentric, who decorate themselves with tinsel ornaments or other rubbish, owing to delusions, and we are often led to the discovery of the latter by what we see on them or in their apartment. Many will eat no food except that which they cook themselves, and thus we find that they have delusions about poison. Others will not leave the house or even the room, and from them we gather delusions about the police being after them for some crime of which they are unjustly accused, or of people wishing to murder them or shut them up. Not infrequently these people have great fear of being placed in an asylum. They may have been there already, or are fully aware that their peculiar mode of life renders it

very probable that they will be taken to one, and like so many other lunatics who are conscious of their condition, they try to make their relatives promise never to send them thither, and some who are weak-minded enough to make such a promise are terribly hampered afterwards when it becomes absolutely necessary to resort to such a step.

The amount of dirt, eccentric dress, or peculiar habits which constitute insanity from a legal point of view may give rise to great forensic controversy, which is especially apt to arise in will cases in which the eccentricity has gone on unchecked during life, and is thought to have affected a will which is disputed after death. One can only say, with regard to such, that every case must be judged on its own merits apart from all others. Much will turn upon the origin and duration of the symptoms. If a person who up to a certain date has been methodical, orderly, and clean, like the rest of his fellows and equals, then undergoes a complete change, severs himself from his surroundings and leads a life of complete seclusion in filth and wretchedness, it is probable that this man's mental condition has undergone a change and is deteriorated. It is also probable that he has delusions, whether he has revealed them or not.

Hack Tuke has given us an interesting history[43] of a man whom he calls the hermit of Red-Coats Green, who lived for a quarter of a century shut up in the same house alone, every window and door being carefully barricaded, and here he was visited by Dr. Tuke, who thus describes him: "I went up to the window of what had been the kitchen, the glass and casement of which had long disappeared, the strong iron bars only remaining. Here the possessor of ample means and a man of at least fair education lived day and night. He appeared to emerge from a bed of ashes (he had not slept in a bed for many years), and I observed that when his room was entered after his death, the floor was found to be a couple of feet or more deep with the cinders which had accumulated. On my appearing at the window he came forward and entered, though with apparent reluctance, into conversation, his countenance being marked by an expression of suspicion. His aspect was quite in keeping with his abode. Unwashed for many years, his skin was not in a desirable condition, the white of his eyes contrasting strangely with the rest of his person. Clothes he had none, only a dirty blanket loosely thrown over him. In the room were a fire, an old table, and numerous bottles. He spoke to me in a low, rather plaintive tone of voice and gave me the impression that he was laboring under a certain amount of fear or apprehension. Part of his conversation, which otherwise was perfectly rational, conveyed the same impression. He intimated that his relations were against him, and I understood him to give this as

a reason why his house was barricaded. So far as I could make out, through his prison-like bars, he was laboring under a partial insanity —a monomania of suspicion or persecution. Several of his visitors agree in the statement that he assured them his relatives, especially his brother, were plotting against him. He never wrote a letter to any member of the family nor to any one else. He had a check book and used it for the payment of some of his bills. When he required money for his own use, his bankers would receive a verbal message and transact business with him. In consequence of his refusal to sign his name to any paper bearing a stamp, as he would not acknowledge the Queen, the receipt stamp had to be added afterwards." He gave away a great deal, sweetmeats, coppers, and gin and water to swarms of tramps. He ate bread and cheese and red herrings, and drank both milk and gin. He had a great fear of poison and gave up milk because he suspected it. On this account he often changed his baker, and after his death nearly a cartload of untouched and suspected loaves was found in his room. He died of apoplexy at the age of sixty-one.

This gentlemen was visited by one of the commissioners in lunacy, John Forster, the biographer of Dickens, and also by Dickens himself, but because he could talk rationally and acutely, they both thought him sane. He was unquestionably insane. As Dr. Tuke observes: "There is the family history, pointing to hereditary predisposition, only wanting some exciting cause to arouse it; the change of character at ten, associated with an alleged physical cause (ringworm suddenly cured), the action as a moral cause of an injuriously indulgent bringing up; there is subsequent to the age of ten constant waywardness and obstinate wilfulness, combined with untruthfulness; acts which occasioned frequent alarm to his family; the necessity at length of legal restraint (he was placed under certificates for two years); freaks of dress and no dress; extraordinary conduct on and after the death of his mother (he kept her body in the house for some two or three months); the persistent notion, if we may not say delusion, respecting the Queen, involving the loss of considerable property; the entire neglect of his dwelling and person; the groundless antipathy and suspicion he felt towards his brother; the delusion that poison was put into his food; his fits of mental depression and his violent passion on the slightest contradiction. But he could converse intelligently on many subjects, such as the classics, Shakespeare, and the literature of the Restoration. His memory was remarkably retentive, and he fully understood the value of money. If a jury had had him before them, dressed like a gentleman, and had not seen the condition in which he lived, it is a question whether they

would have found him insane. A will, which he made some years after his mother's death, evinced no animosity towards his brother, nor did it display any eccentricity or insanity in the disposition of his property.

Excessive drinking is one of the acts of the insane. Much has been written on this subject and various views have been propounded by the writers. It is quite certain that drinking and insanity stand in relation, one to the other, in several different ways. First of all, there is the habitual drunkard, man or woman, who has a habit of drinking, and will get drunk whenever he can, and drink himself drunk. We are perpetually consulted about such people, and asked to see them. I refuse to do this if it is probable that I shall find them under the influence of liquor, and then I am told that if sober they are perfectly sane. This habitual drinking may, if it is excessive, result in delirium tremens, in acute alcoholic insanity, or in chronic insanity, but it may continue for many years without any of these results, and may cause the ruin of a man's business, profession, and prospects. It is for these cases that we require legal machinery to control the patients for such a time as will enable the habit to be overcome.

Dipsomania proper is an insanity, an insane impulse to drink which occurs in individuals degenerated by hereditary taint. They are not insane from drink, but insane before they commence to drink (Magnan). This form of insanity is almost invariably periodical, and may recur after a long or a short interval. Its duration also will vary from a few days or a week to some weeks or months, depending on the quantity of alcohol taken. I knew a gentleman engaged in business, orderly and properly behaved as a rule, who periodically vanished out of sight and went to some low pothouse at a distance from home, where he drank. In about a week or ten days he returned home and went on with his work. This went on for some years till he died, of what disease I have been unable to learn. There is often a stage of mental alteration before the drinking commences, and this is generally depression, so that some have classed the disorder as a variety of melancholia. This recurrence is a feature which is common to other forms of mental disorder and points to the neurotic origin, for in the intervals these persons have no craving for drink and often have an actual aversion to it.

"Between the true dipsomaniac," says M. Legrain,[44] "who drinks impulsively and the common drunkard, there is a very numerous class of drinkers—actual intermittent drunkards—who seem to obey a sort of impulse, but are more like a common drunkard through their pronounced liking for intoxicating drink, and are also like true

dipsomaniacs in consequence of certain psychological characters; as a matter of fact, they are often confounded with dipsomaniacs." For these M. Legrain proposes the name of *pseudodipsomaniacs*, and they are, he says, "patients with a weak will, without energy and easily directed in any direction; actual weathercocks, they appear in the presence of alcohol to be great children incapable of any efficient and energetic action. Nevertheless they strive, and this consideration explains why their excesses occur periodically in a recurrent manner; they resist until some tempting opportunity makes them forget all their good resolutions. They are the victims of occasions which they do not want to avoid, because they love alcohol; they would never become drunkards if it were possible for them to live always under tutelage."

To draw a line of demarcation between these and the true dipsomaniacs on the one hand, and the true habitual drunkards on the other, is undoubtedly very difficult. One distinction which may be made between the first two is that the dipsomaniac, when not under the influence of the paroxysmal attack, is proof against temptation and is no more to be led to drink than another is led to suicide in the intervals between his attacks of melancholia. But the pseudodipsomaniac loves alcohol, and although he may promise repentance and vow that he will never do it again, at the first opportunity his courage vanishes and he falls. These people may fitly be classed among the victims of the so-called *moral insanity*, while the true dipsomaniacs should be ranked among those who suffer from insane *impulse*. The prognosis in the case of the latter is better than in that of the former, for we have to deal with a higher kind of mind, though one clouded by temporary insanity. This we may hope to relieve by measures conducive to the health of mind and body, by mental training and gymnastics, and by a strict hygiene during the intervals of the paroxysms. And when the attack is present, our endeavors may be cheered by the knowledge that it will pass away if we can preserve the sufferer from suicide or other mishap.

Of the morally insane drinker we can have but little hope. We have to deal with a weak mind, the result, probably, like the other of inherited taint, but one which all our efforts will not bring to a normal standard. This condition is permanent, and the sufferer is only preserved from a fall at any time by being propped up by force, moral or physical. It is for these that inebriate asylums are so badly wanted, for these who are quite unable through their infirmity to take care of themselves. The habitual drunkard needs them also, the man or woman who drinks because he likes to drink, who never strives against it whether it is the private tippling or the public-house orgie.

These persons will drink so long as they have money in their pocket, or can turn anything they possess into money. They are the people who spend their wages in drink, are found drunk and disorderly in the street, are locked up again and again and sentenced to short terms of imprisonment which do no good. For them inebriate asylums are necessary and compulsory sequestration. The fear of a repetition of a long sentence may deter them, but nothing else will. They approach the criminal class more nearly than the insane.

Suicide.—Nothing is more common among the insane than a wish to commit suicide, though it is not to be held that an attempt to take one's life is of itself proof of insanity. It has become a fashion nowadays for coroners' juries to return a verdict of temporary insanity in every case of suicide, the practice having been brought about partly on account of the difficulties raised by life assurance companies, and partly to spare the feelings of friends. Yet those who see the patients in a general hospital know that numbers are brought there rescued from the river, or with throats half cut, or half poisoned, who are not insane, and our police courts tell the same story. A great number of such cases may be put down to drink, which is the chief factor in many of the successful as well as the unsuccessful attempts.

The study of suicide in various countries is interesting and has been carefully worked out by Morselli, William Ogle, and others. The statistics show that it is much more common among men than women. Tables in the *Journal of Mental Science* (January, 1890) point out that in this country, from 1861 to 1888, the result as to the liability of the sexes to suicide may be stated thus: among equal numbers living of both sexes there were almost exactly three male to one female suicide. This proportion held good at all ages except at two periods, namely, in the fifteen to twenty and the forty-five to fifty-five year periods. In the earlier of these two the female is actually higher than the male rate. The break in the scale at forty-five to fifty-five marks the sudden shock given to the female system by the menopause, while the exceptional inversion of the male and female rates in the fifteen to twenty year period marks the conversion of the girl into the woman. Dr. Ogle points out that this period is not only that in which the suicide rate for women is higher than that for men, but is also the only period in which the general death rate is higher in the female sex, and is also marked by an exceptionally higher rate of lunacy for women than for men.[45]

If we could have an accurate record not of the actual deaths from suicide but of the unsuccessful attempts, we should probably find that the rate in the two sexes was much nearer than three to one. Men are more determined than women, and in such modes of destruc-

tion as cutting the throat, where some strength is needed, they are more likely to do it effectually; many women are brought to our hospitals with throats slightly wounded. Hanging, which is easily carried out, is not liked by women, who prefer drowning, and many are rescued from the water when they throw themselves into a place where there are people and boats at hand. They prefer poison to bloodshed, but poisons are not easily procured and they make attempts which are frustrated by timely aid, or the poison taken is too weak or makes them sick. Their most effectual method is throwing themselves from a height.

Because the statistics of the registrar-general show a preponderance of deaths from suicide among males, we are not to infer that among the insane male patients are more suicidal than female, though for the reasons I have given there may be more deaths among the former. Any insane person, male or female, may be suicidal, and this very early in the illness, for the majority of cases begin with a stage of depression, even those which later develop very acute mania, and in this depressed stage suicide may take place. The depression may be apparently slight, so slight as not to have become organized into downright delusions; yet the feeling of there being something wrong, he knows not what, or the fear of getting worse and encountering some unknown evil, makes a man weary of life, and so he "shuffles off this mortal coil," preferring "rather than bear those ills he has, to fly to others that he knows not of."

If we have the opportunity of accurately ascertaining the history of the slighter cases, which may be called simple melancholia, but are nevertheless marked by suicidal desire, we shall find in the majority a strong insane inheritance and also an inherited tendency to suicide. This is very prevalent in some families, and is handed on from parents to children, appearing whenever the nervous constitution is lowered by any shock, mental or physical.

The insanity which make us most apprehensive of suicide is acute melancholia with delusions, and these may vary much, yet all seem to point to the same end. It sometimes happens that a man is so low and depressed that he feels himself likely to commit self-destruction, and may express a horror of it and declare that he never will do anything so wicked. He may in this manner completely deceive his friends, who will think that he is quite safe from danger, and yet the next day, perhaps, he will not be able to resist any longer, and will, if not prevented, throw himself from a window or over a staircase. The religious melancholics are very suicidal, for they think themselves too wicked to live, and many imagine not only that they ought to put an end to their existence, but that being so desperately wicked

they ought to inflict all the pain and punishment upon their bodies that they can. A favorable mode of self-injury is the setting themselves on fire, and this they will do in various ways by concealing matches or lighting paper at the fire or candle when the attendant is not looking, and they will endure the pain of burning for a long time without raising any alarm. Another favorite method is swallowing any substance likely to do them harm, as broken glass or china, articles like brooches, needles, or pins. It is marvellous how such things are swallowed by some patients and pass through them without injury; probably every asylum has records of such experiences. The delusion may not be religious; the sufferer may imagine that he is ruined in his fortune or business, and that he, his wife and children are all going to be starved and turned out into the streets barefoot or naked. This idea may prompt him to destroy not only himself but also his family to save them from this wretched fate, and many of the murders of families which we read of in the newspapers are committed from this delusion.

There is also a large number of suicidal hypochondriacs, people who think they have an incurable disease or spermatorrhœa, or imagine they are impotent because their melancholic condition has annihilated in them all sexual desire. There are also some who think they are the victims of syphilis, and point to every speck or pimple on their bodies as evidence of the disease. The constant and haunting dread of this malady often drives them to suicide. In all these different forms of melancholia the patient's condition will vary from week to week or even day to day; to-day he may not be suicidal, his condition is above that level, but to-morrow by a bad night or want of food he may be so "reduced" that his higher centres lose control, and although the delusions may be just the same, the depression is greater and the suicide point is reached. It may even be due to some trouble in the digestive system, such as will cause gloom and anxiety in an otherwise healthy person.

There are besides these melancholic patients many who will commit or try to commit suicide in the early and acute stage of insanity, in delirium tremens, or in epileptic mania. They may even do it to escape from where they are restrained, or to get away from those who restrain them, whom they imagine to be fiends or murderers. They may be subject to paroxysms of mad fury in which they will dash themselves against a wall, into the fire, or against a window, just as others will smash and destroy from a sheer impulse of destructiveness. These people are extremely difficult to treat, and require all the appliances of a well-ordered asylum. They will require a padded room to prevent them from dashing their heads against the wall, and

even this may not be sufficient without restraint if they have a desire to gouge out their eyes.

Besides the suicides which depend upon delusions we find a certain number, I believe a small one, which proceed from what has been called suicidal impulse. I shall have to speak hereafter of impulsive insanity, especially with reference to homicide, but this form of suicidal impulse may be mentioned here. It is found in patients who are not specially melancholic and present no delusions which should make them wish to end their life on earth. The insanity may be well marked and their efforts to commit suicide unceasing; but, on the other hand, we find some in whom the signs of insanity are difficult to detect and the suicidal impulse will be occasional only. A patient may go day after day without any attempt, though opportunities constantly occur, and then when the fears of friends and attendants are allayed, some sudden impulse or some tempting chance may lead him to commit the act. These doubtful cases require great care and caution when after the acute symptoms have passed away the question of discharge arises. Has the patient who was once undoubtedly suicidal lost the desire, or is it likely to recur? Concerning such, no rule can be laid down. In order to get away from the restraint of an asylum patients will dissimulate and deny delusions of every kind, and in the quiet and rest of an asylum the wish for suicide may have passed away and they can truthfully tell us that they have no desire for anything of the sort, yet placed in their old environment, and having to face the world anew, the feeling which was thought to have passed away will suddenly return.

There is one form of insanity which may easily be mistaken for suicidal impulse, but it is that characterized by hallucinations of hearing which have been already described. The "voices" command the sufferer to commit suicide, and he obeys implicitly, but he does not reveal to us that he hears them and so we may ascribe to impulse that which is really the result of delusion. Perhaps the most genuine cases of suicidal impulse are those which occur in the young. Young men and maidens, even young boys and girls, conceive a morbid idea in their mind, an uncontrollable desire to gratify the craving for the unknown but imaginary pleasure of self-destruction, and so it happens that every asylum can bring forward instances of attempts made by the young. Many of them are masturbators, and all may be looked upon as having by inheritance a bad neurotic history.

Self-Mutilation.—Not infrequently we meet with patients who endeavor to damage or mutilate themselves in some way or other, not for the purpose of suicide, but from some delusion or morbid idea. One person will pluck out his eye, following the scriptural precept; another

will try to cut off an offending hand. Not uncommonly the organs of generation, one or all, are removed because they have "offended," and incited the patient to lust or masturbation. In the *Journal of Mental Science* (Vol. XXXII., 44) there is an account of a patient, aged twenty-five years, who two and a half years after admission to an asylum in New South Wales excised the left testicle and five months afterwards the right, which he swallowed to prevent any one else getting it. He became demented, and as his dementia increased he would scratch himself with pieces of wood, stone, or glass, and eventually he appeared ill, and on examination it was found that two months previously he had found a nail, had placed the point against his forehead, and driven it in by bumping his head against the wall. This had quite healed over, but on cutting down a wire nail was found two inches long driven into the skull up to its head. The man died, and on the surface of the convolutions there was a small quantity of pus, and in the substance of the frontal lobe was found a cavity filled with altered blood and broken-down brain substance. Patients will burn themselves in the same way. Lately I saw a lady who had seized a large lump of incandescent coal with her right hand, and a young man who had placed his face on the top of the fire in the dining-room of his father's house.

There are many who damage themselves in minor ways which are very troublesome and hard to deal with, though they are not attended with so much danger. One is the habit so many have of picking the fingers. Biting the nails is common enough even among the sane, but patients will not only bite but pick their fingers till they are raw and bleeding, and will pick sore places on their faces, arms, or body in the same way. Many will pick the hair out from their head or beard, hair by hair, till they make their faces smooth and their scalp bald. One man, not in an asylum, made himself so bald that it was necessary to provide him with a wig, but his fidgety fingers could no more let this alone than his own hair, and the wig very soon had to be sent for repairs. The picking of the face may be serious, and indelible marks may be made in this way, so that it is necessary to keep the hands in padded gloves till the habit or trick is overcome. One lady picked away all the septum of the nose for want of such measures being adopted.

Talking to Self.—Another act of the insane is constant talking to self. Sane people do this also, and it is not uncommon to meet a man in the street talking volubly to himself as he walks along. But he does not talk to himself when he is in a room with others as the insane do. Some talk incessantly, converting their thoughts and ideas into words, and as the former are an incoherent jumble in many

cases, so will be the latter a farrago that it is impossible to remember or write down. Others will talk out loud to imaginary persons and answer imaginary voices. We may by listening to these conversations gain valuable information concerning the individual, and discover delusions and hallucinations which would not be revealed if we directly questioned him concerning them.

Mutism.—Besides the patients who talk too much and talk to themselves, we not infrequently see others who will not talk at all. It sometimes happens that we are called to examine some one for the purpose of a certificate, who remains absolutely silent. Not a word can we get in answer to questions, nor will the patient write or convey to us in any way his reason for refusing to speak either to us or his friends. I have known medical men find a difficulty in signing a certificate in such a case, but I look upon such mutism as sufficient evidence of insanity coupled with the history we hear from friends. For this silence is not likely to be the only or the first symptom of insanity; it is not found in the initial stage, and we shall probably learn a good deal if we make inquiries. Concerning it all we may question the patient, and ask him whether it is true and accurately related. If he refuses still to speak, we may conclude that his mind is so disordered that he can take no notice of that which concerns him so closely, or that from some delusion he will not give utterance to what is occupying his mind. I have known this silence preserved for many years. One gentleman whom I have attended for upwards of thirty years has never spoken to me the whole time, and only a rare monosyllable to any one else. He occasionally mutters to himself, but not so as to be intelligible. He requires to be washed, dressed, and fed, but is not demented, and can draw very tolerably in water colors. Friends sometimes think such patients aphasic, or that they have something the matter with the vocal organs, and I have known a girl examined by eminent laryngologists with this idea. She talked fast enough when her mute fit had passed away. Many old, demented people hardly ever speak, never perhaps unless spoken to, but these can all say a few words. The mute patient is almost always under a delusion that he must not speak, and this may make him silent even for years. There is nothing to be done in these circumstances, and persistent attempts to overcome the taciturnity are more likely to prolong it than to be crowned with success.

Wasting Property.—Besides damaging his person in various ways a lunatic may squander his property or enter into speculations and contracts which he never would have done had he been in his sober senses. Here it will be seen that the spending of money recklessly and needlessly is a question of degree, and where it is done to some but not to

a very large extent, the insanity, whence it proceeds, will require additional evidence before we can use legal restraint. There are many patients about whom there can be no doubt. They think themselves millionaires, will make us presents of houses, horses, or diamonds, and amuse themselves by writing to every tradesman who advertises in the papers, and ordering half his stock. But others, who may be rich men, will spend money foolishly, or in debauchery or some fashion alien to their custom, and yet not to an extent which will seriously cripple their income. Here controversy may arise, and the same may be said of the senseless extravagance of the weak-minded or imbeciles, who may dissipate a large fortune in a few years in drunken riot, and yet will be held by juries to be sane because they have no delusions and can behave themselves with propriety when they are being examined in a court of law.

Acts Done towards Others.—By far the most important of these are homicide and homicidal attacks. Besides this we find arson, rape, and theft.

Homicide may be committed by a lunatic for various reasons. All such acts do not proceed from a *homicidal monomania* or *homicidal impulse*, though some do, and these will be considered under special heads; they are the rarest of all. Those most commonly met with are the following:

I. Homicidal attacks on attendants are constantly made by patients who have a dislike to those in charge of them, either from delusion or because they are kept in order and restrained by them. They may be made also with a view to escape, or to obtain possession of the attendant's keys.

II. Homicide may be the result of a delusion or hallucination, and this is probably the commonest of all. One of the most frequent delusions is that of persecution. Patients imagine they are persecuted, plotted against, followed, watched, poisoned by persons known or unknown. They will very likely attach such delusions to those they see most of, or who are most closely related, and will attempt to get rid of them and of the persecution by homicide. Others think that some terrible evil is about to befall those they love best, and will put them to death to avert a worse calamity and possibly commit suicide afterwards. This is the history of many a tragedy related in the newspapers. The connection between the crime and the delusion in these cases is not hard to follow. But often it happens that there is no apparent connection. A man may have a delusion, but one which does not appear to lead in any way to homicide. It is not to be concluded, however, that there was no connection because we cannot discover it. To trace the thread of ideas in the mind of a lunatic is a

very difficult task. He may be unable to do it himself or may be reticent and unwilling to aid us. Perhaps months after he may reveal that which led him to the act.

Then there is the large class of patients who have hallucinations of hearing—hearing "voices." These voices worry and persecute them till their lives are insupportable, and as they often imagine them to be uttered by those around, they may shoot or stab some unfortunate and innocent person who is near. Here, again, the hallucination may not be known or confessed, and the apparently motiveless act may be put down to homicidal monomania or impulse when it is nothing more than an act committed under the influence of an overwhelming false belief. I have already spoken of such hallucinations.

III. Homicide may be committed by persons of weak mind, idiots, imbeciles, or demented, for some silly or imaginary cause of offence or from mere imitativeness. An idiot may kill a child because he has seen a fowl or a sheep killed. An imbecile may commit a murder in order to gain notoriety and be talked about in the newspapers. Of this a notable example came under my notice a year ago which will be mentioned in the section on imbeciles.

The insanity of these three classes of homicides is not to be questioned. Here and there a patient may conceal his delusions, and we may have some trouble to discover such symptoms as hallucinations of hearing, but in by far the greater number of cases indications of insanity will have been noticed prior to the committal of the act.

There are others, however, who have not been thought insane before the homicide, which has been the first thing to call attention to their state of mind, and these also may be divided into three classes.

IV. Homicide is frequently committed by epileptics. Many epileptics are not considered insane, and if the fits are not numerous, they may pass muster as sane people and mix in society and discharge the duties of ordinary social life. But it often happens that although in the intervals between the fits the mind may appear sane and sound, yet for a certain period prior to a fit or a certain time after, there may be considerable mental disturbance which may even lead to homicide. Those about such a patient may know little and notice little of the epilepsy. The attack may be extremely slight, one of *petit mal* only, and may have entirely escaped observation. The French speak of an *épilepsie larvée* or masked epilepsy, where no fit is discernible but mental disturbance is supposed to take its place. Whether this be so or not, it is certain that the fit may be very slight, may occur in the night or when the patient is alone, and so be unnoticed; and a homicide may be committed in the strange automatic

state which follows such an attack, and there will be no knowledge or recollection of the deed when this state passes away; and in the furious mania which succeeds a number of fits, homicide may be committed under the influence of delusions or hallucinations.

V. Homicide may be committed by a person who has a paroxysm of acute insanity which may come on quite suddenly. The patient may even wake out of sleep and at once become delirious, and under the influence of some frightful dream or in a panic of fear caused by some delusion or hallucination, may attack any one who is in the same apartment. Such a paroxysm may soon pass away, the whole being an example of what has been called *transitory mania*, and afterwards there may be very little consciousness or recollection of what has passed and the patient may be horrified when he hears of it. The furious mania produced by alcohol may likewise lead to homicide, as it frequently does to suicide. Such people may not suffer from delirium tremens; they are what has been called "mad drunk," and they may commit any kind of violence while in this state, which yet may pass away in twenty-four hours if liquor is withheld and sleep returns.

VI. Besides all these we have the homicides which are committed under the influence of "homicidal impulse" or "homicidal monomania," not a large, but a very important class, concerning which much contention has arisen in courts of law. This variety will be considered under the head of impulsive insanity. That it exists is now generally acknowledged by alienists, but many cases are placed in it which for want of an accurate diagnosis should come under one or other of the five above-mentioned varieties. Where delusion cannot be discovered, where there is no history of epilepsy and the weakness of mind is not very pronounced, we are apt to have recourse to the theory of homicidal impulse. A careful search into the history and antecedents of the patient, and a close cross-examination may reveal a motive which has been hitherto unsuspected.

There are other acts committed by insane people which hardly deserve to be placed in a category. One is the so-called *pyromania* or arson, a love of setting things on fire, which may be noticed in some patients. There may be various motives for this. I have known a man set fire to the window frame in order to escape. Others will try and set fire to the room, furniture, or bedding with the same object, or with suicidal intent. It is a common trick to throw things into the fire, and many will get rid of all their handkerchiefs in this way, and in these days of open and unguarded fireplaces it is difficult to prevent them. But all these are among the dangerous acts and tricks of the insane and are not characteristic of any one form of in-

sanity, but may be looked for wherever lunatics are kept in restraint.

Erotomania, Nymphomania, Satyriasis.—Under these names, which are used sometimes as synonymous, sometimes as indicating different states, we now place the disorder of patients who commit acts of indecency or indecent assaults on others of the same or the opposite sex. Grave questions will arise as to the responsibility of these persons. About some there can be doubt; many of our young female patients when in a state of acute mania are extremely erotic and their acts and talk are most indecent, but all this passes away when recovery takes place or the acute stage is over. But the chronic form is found in the degenerate, and is a sign of degeneracy both in men and women, whether it occurs in those who have been weak-minded from childhood, or have had attacks of insanity leading to a degraded and demented condition, or have arrived at the latter through age. It may be extremely difficult to fix the degree of irresponsibility in these cases. Not every pæderast is insane, neither are all who assault women or expose themselves to children. We must look for symptoms of insanity besides the act, and we shall frequently find them, but not always. At any rate they are not cases in which the question of homicide or suicide is raised. If the offenders are held responsible and are consigned to prison, they will be under medical observation and the insanity, if it exists, can be detected.

Kleptomania is a name given to stealing committed by the insane, and is, according to some, an insane impulse or monomania existing in an otherwise healthy mind. Like the last-mentioned, this thieving is not uncommon among the insane, but the insanity is manifested in other ways, as we shall find upon close examination, and acts of theft are committed by well-dressed people who are not insane.

When we are consulted about such acts done by persons who are supposed to be insane, and to whom the value of the article stolen is of no moment, we may suspect one or other of several things:

I. If the individual is a man between twenty-five and fifty-five, we must examine him closely, and may possibly discover symptoms of early general paralysis in which stealing is by no means uncommon. A marked case of this kind was lately brought under my notice to which I shall refer later.

II. A patient may be in a state of what is called *moral* insanity, insanity, that is, without delusion, where the chief symptom is an alteration and degradation of character, but without delusion, either because the stage of delusion has not been reached, or has been reached and then has passed away, leaving the individual half cured.

Such a one will justify insane acts of various kinds and among them thefts.

III. There is the *imbecile* class, which will be described later on. These weak-minded people are given to thieving, as they are to lying, drinking, and frequenting low company. To fix their irresponsibility is extremely difficult. In the lower station of life such thefts bring them to prison; in a higher they come under our notice and much care is required to pronounce an opinion upon them.

From time to time we read of ladies appropriating articles in shops, and it is said that pregnant women have longings which lead them to do so. Such are not insane; they are probably people of weak or ill-regulated minds, but the plea of insanity cannot be raised unless other symptoms are discovered.

CLINICAL VARIETIES.

Melancholia.

In describing the various kinds of insane patients it is fitting that those should come first whose mental symptoms are marked by depression. They are by far the larger number of all that are met with in ordinary practice and are the "out-patients," so to speak, of the department; they consult us, or we are consulted about them, in our own houses, and many recover without being placed in a special institution. Depression will range from mere low spirits to the most acute delirious melancholia, and the different degrees have received different names. We read of *simple* melancholia, of *delusional*, *hypochondriacal*, *religious*, *suicidal*, but there is no marked line of demarcation, and a patient may advance slowly or rapidly from the first stage to the last. In the earliest the patient, or more probably his friends, will consult the family medical adviser, who will be told that for a longer or shorter time there have been noticed an alteration and depression, an inertness and inability to attend to business, a want of interest in, or absolute dislike to, those things which formerly were a pleasure. This we may hear from the patient himself, but more often from others, while he himself pooh-poohs the whole matter, declares there is no alteration, tries to avoid the physician, and rejects his advice and treatment. As he and his friends usually differ in the account of his symptoms, so will they differ in the cause which either gives of the disorder. Here it is probable that the cause assigned by the friends is the true one rather than that which we receive from the patient, for the latter is prone to conceal or minimize the true origin and to exaggerate some circumstance which is a concomitant rather

than a cause. The friends tell us he is worried and overworked; he himself maintains that he has had pecuniary losses which have greatly depressed him. But we hear that these have been trifling and such as would not have caused the least trouble or anxiety had he been well. He will not allow that he is overworked, because he is afraid that he will be ordered to go away and leave his business, which he thinks will go to pieces in his absence, not being able to see that he is quite unfit and unable to conduct it with advantage in his present condition.

Without the assistance of friends we can do little in these cases and are always in doubt and difficulty when a patient presents himself alone, and we have to rake about among the scraps of information which he gives and try to elicit the truth. Those who are brought by their friends try to put a different complexion on the symptoms, assign a different cause and seek a different remedy. They say that a physician can do them no good, that it is not illness but wickedness that has brought them to this state, and that theirs is a case for a clergyman rather than for a medical man. Others will ascribe their mental depression to bodily illness. They have disease in any or every part of their body, are full of hypochondriacal fancies about what they can or cannot eat or about their digestion and bowels. They will tell us that they never sleep, and have not slept for weeks or months; here again we want information from others, and may learn that this depressed individual sleeps fairly well and eats, perhaps, voraciously, but that he is so taken up with anxiety about his health that he has no time or energy to attend to his family or business. Having probably consulted already a host of physicians, he produces a sheaf of prescriptions, has a knowledge of all the drugs in the pharmacopœia, and argument and demonstration are alike powerless to convince him of his delusions. Hypochondriacal patients are extremely numerous and haunt the consulting room of the ordinary physician as much as that of the specialist. They are most difficult to treat and the tale of their sufferings is never-ending and a weariness to the listener.

Of these two classes, patients suffering from simple melancholia and hypochondria, by far the greater number are persons who cannot be called insane in a legal sense or dealt with by being placed as insane in an asylum. Many of them would without doubt suffer if so treated and would derive harm and not good from asylum life and its surroundings. What then are we to advise when consulted by them or their friends? If we examine the individual we find in the majority of cases that there has been loss of appetite, loss of weight, and loss of sleep, the loss of weight depending on the want of sufficient

sleep and on malnutrition, malassimilation of the food taken, or an insufficient quantity of food, the insufficiency depending on defective appetite or hypochondriacal notions about the necessity of abstention or on a mistaken belief that when there is constipation only a small quantity can be digested. Constipation in such persons is very common and is met by them in various ways, some dosing themselves with strong purgative medicines and thereby still further weakening the digestive system, others abstaining from food and so laying the foundation of the common delusion that nothing passes by the bowel, that there is complete obstruction and therefore no food of any kind ought to be taken. The friends also of the patient are apt to look upon the constipation as the cause of the whole trouble and say it is all "liver," and think that purgative medicines are the sovereign remedy.

For one reason or other it is almost always the case that the patient is underfed; often not more than half the quantity of food is taken that is an adequate supply for a man in health, and the wasting from the depressed feeling and diminished sleep soon shows its effect in loss of flesh, a coated "nervous" tongue, and unwholesome tint of face. What is to be done? Almost invariably it is necessary to advise removal from home. The man in business who thinks all is going wrong and that he will not be able to continue it, must go away. The wife who has lost all interest in her house and children must leave them. The objective side of the consciousness of such people is weakened and the subjective rises in proportion. The relation to the environment is dislocated and the latter must be entirely altered. I am not now speaking of the more advanced cases in which delusions are present, but of what is termed simple melancholia in which the malady has not reached the stage of delusion and the patient is capable of a large amount of self-control and able to travel with suitable companions. The choice of these gives rise to much discussion. Wives wish to go with their husbands, and this may sometimes be allowed if the wife is sensible, and if there is another of the party, so that husband and wife shall not be always alone together. Very often it is impossible for the wife to accompany the husband, the object of the change being to separate the two, and rarely is it advisable that the husband shall accompany the wife when the latter is the melancholic. Between two people so closely connected there will be endless discussion of the gloomy thoughts and continual iteration of the same theme. It will be useless to visit foreign towns and picture galleries, to travel amid lovely scenery—mountains and lakes—if the mind is perpetually to dwell upon and give vent to its woes without the restraint of a comparative stranger.

We constantly hear from the relatives that the patient never mentions his troubles to mere acquaintances or even to those more distantly connected. He reserves it all for the wife, the brother, or the sister, and if one of these alone goes away with him, the evil is continued and time and money lost. The best companion for a man is an entire stranger, if possible a physician who can regulate diet, administer medicines, and attend to ailments, real or imaginary. Failing this, the companion should be some one of experience in mental cases who knows what such patients are and has travelled sufficiently to recognize what places and countries are suited to the particular individual. The choice must depend on the tastes of the latter, if he or she has any, and on the time of year. It is of no use to send a man who is fond of the country and field sports to see foreign cities, or one who is studious and literary to wander about in the country, and extremes of heat and cold must be avoided, especially cold. Almost all such patients come to us in an enfeebled condition; from one cause or other, worry or overwork, previous illness, as influenza, or the exhaustion of the depression itself, their strength is reduced and they feel cold greatly; therefore warmth is essential, the regions of frost and snow must be left behind and more temperate climates sought—temperate but not tropical.

The feeding of such people is very important, for few take sufficient food if left to themselves. They complain of want of appetite, constipation, and a foul tongue, and all these may be, and generally are, the result and not the cause of the depressed nervous condition, a condition which must be remedied by nutritive food. What can be done by feeding is well illustrated by the neurasthenic cases treated by the Weir Mitchell system, cases many of which are in a state of starvation with every kind of hypochondriacal fancy. The state of the tongue, for example, which is covered with old, dead epithelium, appeals to the patient and his friends for purgative medicines, and is thought to be an unquestionable sign of dyspepsia. Yet we see this clean, the fœtor of breath vanish, and the constipation give way under a largely augmented diet, which should be ordinary nourishing food, not sick diet or beef tea or the much bepuffed meat juices, most of which are merely stimulants and not foods at all. Constipation at first may be troublesome, the bowels having lost their tone or being clogged by masses of fæces which must be removed by enemata. When this is done, a daily aloetic dinner pill will produce one action which is all that is needed, and as improvement takes place, a pill every other day will suffice till none is required. Should stimulants be given? No doubt we administer less in this country than we did thirty years ago, but a certain amount is often useful and even

needed. Malt liquor suits some if they are accustomed to take it. Many require wine—port wine, Burgundy, or Bordeaux—but spirits are of little use, unless, it may be, to promote sleep on going to bed.

Are we to give medicines to procure sleep? "On no account," say some, "sleep thus induced is of no benefit." I differ wholly from this, and from an experience of forty years and a large number of patients I am confident that many have owed their recovery to sleep procured by drugs which have arrested the downward progress of the malady and saved the patient from an asylum. With regard to the medicines to be given much may be said. Almost every one before he comes to a specialist has been put through a course of the bromides, or has taken one or other of them himself, under the idea that bromide is the sovereign remedy for nervous disorder. Bromide rarely does good in melancholia; an occasional dose may procure quiet if there is much excitement, but a prolonged course, especially of the potassium bromide, will cause emaciation and increase the depression. It is just as useless here as it is useful in acute and sthenic mania. In melancholia I give sedatives for the purpose only of procuring sleep, and for this we now have the choice of a variety. In some cases, especially of elderly persons, opium is most useful, allaying the intense mental distress and restoring sleep. Not every preparation of this drug is of equal value; the salts of morphine often cause sickness and constipation, and the latter is a trouble with which we may have already to contend. Hypodermic injections have disadvantages, and if a patient learns to perform them on himself, he may easily acquire the habit and craving so often met with. The best form of opiate is a watery solution or tincture or the solid opium itself, which may be combined with other medicines as chloral or hyoscyamus. A modern remedy which is often of great service is paraldehyde; it is nauseous and makes the breath smell even on the following day, but given in orange wine, it is administered without difficulty, especially to women, who rather like strong-tasted mixtures. Then there are sulphonal and trional, which are occasionally useful, but all of them may in time lose their effect, and it is a good plan instead of increasing the dose to change the drug and try another of those at our command. As to the time of giving the hypnotic, many require it at bedtime and with it sleep through the night, but there are some who go to sleep as soon as they get into bed, waking in two or three hours and unable to sleep any more. To such we may give the draught on waking, and, if possible, some food with it.

The time of waking from sleep, especially a long sleep, is that at which the greatest gloom and depression is felt, the time when a patient is most likely to do harm to himself and most needs supervision.

Almost all melancholics are worse in the morning and gradually improve through the day, being at their best in the evening. The question of suicide is very important, for there is the possibility of its occurring in every melancholic, and this must be kept in mind when we are advising the removal of a patient from home, or choosing companions or place of residence or travel. Many have committed suicide whose depression has been very slight, who have given no sign of being weary of life, and whose friends are greatly astonished at the act. Now it is clear that if we have to deal with a very suicidal man or woman, we cannot recommend travel in railways or steamships, sojourns in hotels, and walks by mountain and river. Yet we cannot place every one who is suffering from the slight depression which we call simple melancholia in the safe custody of an asylum, and therefore must consider each case and the risk to be run. That there is a risk is beyond question, but it is one which we accept in view of the benefit to be derived from the treatment. In estimating the risk the first thing to be considered is the duration of the depression; if it has lasted for some time and the patient has been stationary, neither better nor worse, and has made no attempt at suicide nor hinted at anything of the kind, we may consider that the risk is not great. But if the symptoms are recent and the advance has been rapid, if the condition is worse than it was a week ago, then such a person ought not to be left alone.

Under no circumstances ought a melancholic to be exposed to great temptation, for there is such a thing as suicidal impulse which may arise in a moment without premeditation. There are many who even in health cannot stand on the edge of a precipice or the ledge of a very high building for fear of the impulse to throw themselves down. Similarly to look down from the deck of a steamship into the miles of blue water beneath may cause the same feeling of impulse even in those who are well able to withstand it, which the melancholic are not. Therefore such obvious sources of danger should be avoided. If a seaside resort is to be chosen, it should be where the walks are not along cliffs, and long sea voyages, a remedy often recommended, should be avoided for the same reason and also because they are monotonous in the extreme. Everything will depend in these cases on the experience, judgment, and tact of the companion who has to select the day's amusement, to order the day's food and the night's medicine according to the requirements of his charge, and a judicious surveillance may be exercised without its being irksome. We are sending the patient away from our own observation and are forced to rely upon the vigilance of those about him. If all goes well and the depression passes away and sleep returns, if flesh is gained

and digestion and appetite improve, there will be a demand that he shall go back to home and business; the wife will want to resume her household duties, to be again with her husband and children. Then difficult questions arise, for if the environment is to be the same, if there is to be the same condition of worry or overwork, there will soon be a renewal of the nervous symptoms, and a second attack will probably be much more tedious and severe. If we can lay our finger on the precise cause of the malady we may be able to suggest a preventive. A man may habitually have denied himself sufficient hours of rest or sleep or have taken an utterly insufficient amount of food. Such matters we can deal with and so lessen the danger; but worry is often beyond our reach. A man may have a nagging wife or a woman a drunken husband; sons and daughters may be constant causes of anxiety, while others have religious doubts and scruples which dull their lives. Patients who have been melancholic a long time should not go back when there is only a slight improvement. Time is required for convalescence, and this should be put to the test by every means that can be devised.

Whether hypochondriasis deserves the name of insanity or not is a question on which eminent authors disagree. It must certainly be looked upon as a mental affection, for when a man in perfect health believes that he is suffering from some grave disease and cannot be convinced of his error, his mental state, so far as his health is concerned, is unsound. Like the simple depression already discussed, it will not be called insanity unless it impels the patient to conduct which renders him dangerous to himself or others, or interferes in some way with his property or business. When this is the case, the sufferer must be placed under care and treatment like any other insane melancholic. It is far more difficult to treat one who is not under restraint whom we can only advise. He has seen many physicians and tried many drugs, but all are useless and only add to the malady. Moral treatment alone is likely to be beneficial, and outdoor exercise is sometimes of great service and may effect a cure; walking or riding on horseback, especially the latter, should be commenced and gradually increased until the limit is reached of which the patient is capable.

Our efforts to arrest the progress of the mental depression may be unsuccessful and the patient advances to the stage of delusions and thinks that he is eternally lost or hopelessly ruined, that his bowels are blocked, or that some loathsome disease has fastened upon him. The suicidal tendency is well marked and there are difficulties about taking food; he has no thought for any but himself, the self or subject consciousness being prominent in all his thoughts and actions.

Here travelling with a companion is impossible and the only question is whether such a patient shall be sent at once to an asylum or be treated in a house taken for the purpose. Either has its advantages, but the latter can only be adopted when finances admit of it; for the house must be of adequate size, light and airy, with grounds in which exercise can be taken without going into public thoroughfares. There must be attendants and some one, medical man or lady, to superintend and act as companion, some one the equal in education of the patient, and for all this considerable means are required; but if they are forthcoming, many are successfully treated in this way and saved from the stigma of being placed in an asylum. This is a great satisfaction to friends and an advantage beyond a doubt to many men and women of position and influence. Where funds are scanty the patient must go to an asylum, for it is hopeless, nay dangerous, to carry out the former plan without a competent staff and suitable premises. Those who go to an asylum have certain compensating advantages. The house is adapted to the purpose and safer than an ordinary house can be, the staff is larger, and the moral force of this is sometimes great. A man or woman may fight and resist when he has to deal with one or two attendants, but if a dozen are solemnly marched into his room, he succumbs and gives up the struggle as too one-sided. An asylum also has this great advantage, the patient becomes a unit among a number of others. In a house taken specially for him, with attendants specially engaged to wait upon him alone, the self-consciousness and egotism which so markedly characterize this form of insanity are fostered rather than uprooted. For there is as much egotism in these melancholic people as in a general paralytic who thinks himself a duke or a Rothschild. There never was a case like theirs; they are the most wicked, the most unhappy, the most persecuted people in the world, the cause of every crime, and about to be tormented with torments greater than ever yet have been devised. All is in the superlative degree, all is consciousness of self and self alone, and may be kept up by the isolation of a special abode or the concentration of the attention of all around on the single individual. But in an asylum the patient is one among many and should be placed with others, for if he is in a room with half a dozen he will get well quicker than if he has his own private apartments and special attendants. The latter is nothing more nor less than a continuance in an asylum of the single-care system and many a patient's recovery is retarded thereby. He should be with others, for the force of example is very potent, and if he sees the rest eating their dinner without hesitation or demur, he will probably eat his; and if he refuses and is told that he will cer-

tainly be fed by force, it will have a good effect, especially if upon persistent refusal the feeding is promptly carried out.

Many recover without asylum treatment when their finances provide them with all that is necessary. Great care must be exercised especially in the matter of suicide. Melancholics in this stage must one and all be looked upon as suicidal, and in an ordinary house with ordinary stairs, windows, and fireplaces the greatest vigilance is necessary. It would be an endless task to enumerate the methods of suicide recorded by writers and commissioners. From them one great lesson may be learned, namely, that a patient should never be left alone. Almost every case is that of a person who has been left or has eluded his or her attendant, or has found the latter sleeping and taken the opportunity of committing the act; but if an attendant is awake and watching, it is not very easy for a patient to hurt himself. Friends are often very silly about this, and tell us that he does not like to be watched, that he does not like a man sleeping in his room. A man asleep in the next room may as well be in the next house, and often he should not sleep but sit up in the bedroom and should be relieved so that there shall be no risk of his going to sleep. One advantage of this is that we have information of the time that the patient sleeps. We are often told "that he has never slept a wink," "has had no sleep for weeks," but an attendant awake can give us accurate information, an attendant asleep knows but little about it.

What has been said already about drugs is applicable to these more advanced melancholics. Paraldehyde, certain preparations of opium with or without chloral, sulphonal, and trional all have their uses and may be tried in turn. Some aperient will be required, something which can be given daily and will act as a laxative rather than a purgative. But medicine may not be efficient without the aid of an enema, for patients will resist the action of the drug and prevent their bowels from acting so long as they are able; an enema is necessary to overcome their resistance, and this is better than giving them very strong purgatives.

The proper feeding of these melancholics is of the greatest consequence. If a patient resists to the uttermost so that he has to be fed by means of a tube, and if he requires many attendants to assist in the process, it will hardly be possible to keep him in a private house; to an asylum he must go where there is a large staff and a medical officer to feed by force. There are many, however, who will not take their food willingly but will allow attendants to feed them. We must inquire carefully as to the amount swallowed, for it is not enough for a man to pick over his dinner and eat here a bit and there a bit and leave half or more on his plate till it is cold and uneatable. This is

what many try to do and then tell us they have taken their dinner and have had quite enough. They may try to take in their attendants in the same way, so when this is the case it is better for those about them to cut up the allowance and feed with a spoon till all is taken. When a patient will not swallow solid food and the attendants feed him with egg and milk or the like, it is not enough for them to pour half of it over him instead of into him and then tell us he has had it. All should be taken or the tube should be resorted to. These persons require a large supply of food, larger, perhaps, than they have ever taken, for many bring themselves to this condition by habitually eating too little and living in a state of semi-starvation, either from fear of dyspepsia or from ideas of its being carnal and wicked to indulge the appetite and eat till one is satisfied. They will protest against the quantity ordered, and vow they have never eaten so much in their lives, which probably is true. We must harden our hearts against their complaints and insist on our orders being carried out with this concession only, that it may be taken in subdivisions. If a quantity cannot be swallowed at one meal, it may be divided into two. The food may be peptonized or some preparation of pepsin may be given with it, but I have found that patients have but little difficulty in digesting even the large additional quantity of food that is given them, for sickness is rare and diarrhœa rarer still. Tonics here will often be needed, and the preparations of iron, strychnine, and arsenic are of great service.

The moral treatment of the melancholic insane is by no means to be neglected, and for this we are dependent to a large extent upon the tact and judgment of those about a patient, whether as companions or attendants. They must remember that delusions are not to be abolished by argument; that the perpetual examination of the patient to see if they are still there, and the constant effort to refute them, are much more likely to fix them deeper and deeper than to eradicate them. Let alone, they by degrees vanish, and the method to be adopted is to distract the mind from them and to substitute other ideas in their place. Some patients wish to bring their fancies forth continually and bore every one around with the never-ceasing recital, but they must be told kindly but firmly to "shut up," that we have heard enough and will listen no more; we must talk of something else, and the invention of another topic of interest is a necessity. Again, it is not useful but harmful to tell these people that they are better. They cannot bear to be so told, even when there is marked and manifest improvement, and they often try to appear not so well and revert to former ideas and habits to prove they are not. Friends and attendants should be warned not to congratulate them on the

amendment, but to go on steadily helping them forward step by step till they gradually return to their former habits of life and press to be allowed to go home and take care of themselves. These patients whenever it is possible should be taken out for drives or walks, that they may see that the world is going on as usual and has not come to an end through their wickedness. In this respect those in private houses have an advantage over such as walk only in asylum grounds.

The very opposite treatment has been recommended by some, the treatment by rest and seclusion in bed with feeding and massage known as the Weir Mitchell system. At a recent meeting of the Medico-Psychological Association this method was brought forward by Dr. J. Batty Tuke, and the opposite, which we may call the open-air treatment, was advocated by Dr. Clouston. The members present strongly supported the latter. It can hardly be supposed that isolation in one room is likely to dispel the gloom of melancholia and the thick-coming fancies that are more likely to be generated than banished by this plan. There is nothing to distract the mind of a man or woman lying in bed with nothing to do but to brood and worry over the past. I have seen slight cases converted into very severe by this mode of treatment.

If treatment fails to arrest the progress of the disorder it may develop in one of two directions. It may become wild, excited delirium, *melancholia agitata*, as it has been called, or *melancholia cum stupore*, the very converse of the other. The patient sinks into profound dejection, and sits or stands all day motionless, vacant and lost, perhaps wet and dirty. He is apparently unconscious of all that is going on around him, yet if we try to move or feed him we find him resisting with all his might. He requires to be dressed and washed by force, to be brought downstairs and led about by force. And although he appears thus lost, yet if a chance is given he will avail himself of it and commit suicide in the most sudden way, and will watch for the opportunity for days or weeks even when apparently in the profoundest stupor. Such people ought not to be left alone for a moment. Their physical condition corresponds to the mental. They are feeble and emaciated, whether young or old. Their vital power is very low and the circulation so weak that hands and feet are livid, and if kept in bed they may easily contract bed-sores, especially if they are unclean. They sleep as little as other melancholics and require narcotics. Needless to say, abundant food must be administered. They will not take any voluntarily and must be fed, resisting more or less; we can therefore select our foods, our stimulants and drugs, and give them without any protest on the part of the patient. With abundant food and warmth we hope to rouse the sufferer

from this extreme state of stupor and bring him first to the condition of an ordinary melancholic and so back to his ordinary health. But this state is one of more profound reduction than that which may be treated in an ordinary house with companions and attendants, and the prognosis is not so favorable. There may be such great weakness and emaciation and such nervous prostration that our food is not assimilated and fails to renew the strength, or the profound brain disturbance may exist long enough to bring about permanent changes in the brain cells, and chronic melancholy or dementia may be the result. The treatment of such can hardly be carried out in a private house, owing to the necessity of having guarded stairs, windows, and fires, and a large staff of attendants.

Still less can the other extreme form of melancholia be treated out of an asylum. The man suffering from that which has been well called acute delirious melancholia does not sit or stand in silent stupor, but in panic-stricken frenzy tears about the room, dashes at the door, windows, or fire, tries to escape from those who he thinks are about to seize or torment him or take him to prison for the sins he has committed. He will not sit in a chair or lie in his bed, but is ever on his feet, thinking that the room is on fire, that he is going to be burned or swallowed up in a lake of fire. He is full of hallucinations of sight and hearing. All his food is poisoned, and he resists with much noise and all his strength those who have to feed him, while a woman in this state will scream till she is exhausted. All such are intensely suicidal and will endeavor in every way to damage themselves. They will resist in order that they may get hurt; will break and swallow crockery or glass, and even gouge out their eyes. The perpetual standing and refusal to wear shoe or stocking may bring about in an enfeebled individual a condition of the feet akin to frost-bite, and if this is not observed or guarded against, the loss of a portion of the toes may be the result. A lady I have seen lately was admitted in a very emaciated condition suffering from this restless raving melancholia. Very soon the toes appeared livid and the great toe of the right foot turned black. She was compelled to lie in bed, and warmth by means of poultices, cotton-wool, and the like was applied. She lost the terminal phalanx of the great toe, but all the rest were saved, and she has recovered from the state of acute delirium, though she is still very far removed from sanity.

These patients are for the most part broken in health, feeble, and emaciated, advanced in years, reduced by some wasting disease as diabetes, or starved, owing to hypochondriacal refusal of food. This being the case, no time must be lost, but food must be given plentifully and regularly. We cannot afford to wait to see what coaxing or per-

suasion will do, nor can we be contented with a spoonful or two which may be got down. The patient must be fed three times a day by the tube and the best food for the purpose is egg and milk. By a large tube, even more solid nutriment than this can be given, in the shape of pounded meat mixed with vegetables and soup so as to make a semi-liquid mass which can be forced through a tube. But egg and milk are highly nourishing, and I have fed a patient with these and nothing else for a twelvemonth. These melancholics will wear no clothes, and will strip off and tear to pieces if they can whatever is put on them, so that it is necessary to clothe them in a suit of strong ticking or canvas, which, being laced up the back, they cannot unfasten or tear. Under this may be worn a sufficiency of warm underclothing, and warm, soft boots fastened round the ankle by a strap and padlocked will protect the feet. The constant standing and pacing the room produce great exhaustion, and it may be and often is necessary to fasten such in a bed in a recumbent posture and to keep them lying down. I have known a man thus fastened and rendered motionless drop off in a quiet sleep and have a better night than he had had for many weeks, during which he had been walking about night after night.

As has been said, many of these patients are at the outset of the delirium sinking from exhaustion or some other disease, and a condition comes on allied to scurvy, or gangrene attacks the lung, or the struggling and excitement wear them out, and in spite of all our efforts they die. The prognosis in all such cases is bad, worse than in those of *melancholia cum stupore*, which is not so fatal to life even when reason does not return and the patient remains a chronic melancholic. With the exception of these two extreme forms the prognosis in all melancholia is very good. Almost every case, if it does not run on to these very acute stages, and the majority do not, progresses to a favorable termination in a longer or shorter time, whether in or out of an asylum. Melancholia, simple or subacute, is a curable disorder, and it is grievous to read in the newspapers the tale of those who are allowed to commit suicide by timid or ignorant relatives, when common care and appropriate treatment would have brought about their recovery and restored them to health and happiness. For the recovery of these melancholic persons is not a mere patching up and release of a half-cured mind. It is an absolute recovery, a recovery which may come about after long years of depression. I have already recorded [16] several of these recoveries after long periods. One gentleman who afterwards became an intimate friend was under my care in an asylum for seven years, and then got well and remained well till the end of his life, his death being due to other causes. He was in Paris during the Prussian and the Commune siege, and was none the

worse. No recovery could be more perfect than his, and it lasted for twenty and more years. It is important to bear in mind the possible passing away of what may be looked upon as chronic and hopeless insanity. After a year or two without any change or improvement it may seem to many that legal disposition of property should be made, that the patient's own estate may be dealt with, house or furniture disposed of, and everything arranged upon the supposition that the rest of his days will be passed in the same inactivity and gloom. Nay, wills may be made by relatives in the same belief. I knew one lady who recovered after being away from home in several asylums and in single care for some fifteen years. Her younger children had been brought up to think her dead, and when she got well her return home was very much like a resurrection. Therefore when we are consulted with regard to the affairs of these people, we must bear the above cases in mind. There is no other form of insanity with which I am acquainted where the disorder disappears after so long a period; certainly it does not in chronic mania, monomania, or dementia, and it is evident that during the long periods of depression the brain has received no permanent damage and undergone no organic change. The disorder has been one of defective nerve force, not of hyperactivity or hyperæmia. All has been in defect, a want of action and a want of power. But when the nutrition has again brought the nerve force to its proper level and the cells have again the power to act and react to normal stimuli, the whole machine works as before, its component parts none the worse for the long disuse.

Favorable as our prognosis may be in by far the greater number of cases of melancholia, it is necessary to guard ourselves in one or two directions. For the melancholic symptoms may be replaced by others of an opposite character. It has been said by some that all insanity commences by a stage of depression. This is not the case, for I have known very acute mania come on in a night without the slightest preceding depression. But many patients, whose attack is one of mania or even general paralysis, pass through a preliminary stage of depression, sometimes of considerable duration, before the maniacal symptoms manifest themselves. I have known a man have an attack of melancholia, for which he was placed in an asylum; he was there for some time and then apparently recovered and went back to his business. He had not been at home long before excitement set in, with all the marked symptoms of general paralysis, which ran its usual course. Another man, also under my care, was for a long time in the asylum in a state of depression before the paralytic phenomena were apparent.

There is another variety of insanity which may disappoint our hopes and baffle our prognosis. A patient is depressed and goes through the ordinary course of an attack of melancholia. By degrees he emerges from it and brightens and his friends rejoice. He is busy and active, in excellent spirits, and those who know him tell us they have not seen him so well for years. But as time goes on his high spirits become abnormal excitement, he is restless and cannot attend to anything, and his energy drifts into active mania, and through it he has to be led; this will in time subside and be followed again by the depression, thus constituting a circle and giving rise to what the French call *folie circulaire*. The history of a patient will tell us whether this succession of symptoms has occurred before. If it has, our prognosis must be unfavorable; the melancholia passes away, but is surely followed by the maniacal excitement which may be far harder to deal with.

Who are the people who break down in melancholia? They are the elderly rather than the young. Many are at the time of life which we call the climacteric, men and women who have borne the burden and heat of the day, whose nervous force has been lessened by long-continued worry or sickness. But it is not confined to them. We find it among the young, for hypochondriacal melancholia is not uncommon at the age of puberty in both girls and boys. Malnutrition of the nervous centres occurring in predisposed patients may stop short of the explosive discharges which characterize acute mania and may produce only depression, just as we often find in the young slight epileptiform attacks (*petit mal*) instead of the severe fits of true epilepsy. The melancholia is a slighter reduction than the explosion of mania, is in fact the mildest form of mental disturbance, amounting only to a mental pain, not affecting the conduct and not marked by delusions.

Stupor with Dementia; Acute Dementia.

I have already spoken of a variety of melancholia called *melancholia cum stupore*, the sufferers from which sit lost, silent, and motionless in profound gloom. There is another class which has been confounded with them and has received various names. It was described by Esquirol, and called by him "acute dementia," which name has prevailed till lately. By "acute" is meant a malady which is not chronic, but is a curable disorder lasting a comparatively short time. If we are to abandon this, it may be well to call it *stupor with dementia*, the other being *stupor with melancholia*.

The patients are not people at the climacteric or advanced in

years; they are all young, from fifteen to twenty-five years for the most part. A girl or a boy after a shock or fright, or an exhausting illness like influenza, rapidly falls into a condition when mind appears to be blotted out and becomes a vacant blank. There is not merely derangement or delusion, though for a time the latter may be noticed; the mind is, as it were, obliterated, and the patient pays no attention to those about him or what is said to him, and if he speaks at all, what he says is the speech of an idiot or dement. Such people are not all motionless. One girl used to snap her jaws together for days at a time; she then took to wagging her head from side to side. These actions were purely automatic, for by no effort of will could she have maintained this incessant motion for so long a time. These patients take no notice if we tell them to stop, but if we interrupt them by a pull or a shake, they may cease for a few moments and then begin again. The depth of the mental reduction varies considerably and may extend from mere silly grimacing and chattering to the most profound stupor when by no effort can attention be roused, when the calls of nature are not attended to, and the patient submits to be washed, dressed, and fed, and after recovery there is an absolute unconsciousness of all that has passed.

This extreme stage, however, is not so common as the intermediate where there is apparently the dementia so commonly found in the chronic inmates of an asylum, who sit and do nothing from morning to night, who are dirty if not closely watched, who dribble from the mouth and possibly require to be fed. The recently demented individual will be like one of these; he will stand all day in a position which may be called cataleptoid, but touch him and we see at once that he is not so unconscious as he looks. He will resist with all his might, so that it is a work of great difficulty to dress or undress him or give a bath. Though he be silent all the day and apparently too lost to answer if spoken to, he may screech loudly when he has to be dressed or moved, or cry "murder" and assert that he is being killed. Some will be dirty in their habits, others, on the contrary, will hold their water for four and twenty hours if they can, and will not let the bowels act without the stimulus of an enema.

It has already been stated that these are young patients, boys or girls, whose nervous power being always in defect has been still further weakened by such causes as a shock or fright, or excessive masturbation or previous illness. The great nervous prostration is shown by the physical condition. The circulation in the extremities is so feeble that the hands and feet are blue with cold even in the hottest weather, and in winter there is great difficulty in keeping them warm and free from chilblains or frost-bite. The heart's action is weak,

though the temperature may not fall much below the normal. They do not lose flesh rapidly like the acutely melancholic, neither is sleep absent as in the latter. The reduction may be so profound from excessive shock or fright that this state of things has come on in a short space of time without the long period of depression which melancholic patients go through before they arrive at the stage of stupor. This constitutes a potent aid to our diagnosis when we have to decide upon the nature of the disorder in such people. One marked difference between the melancholic and the young demented patients is that the former are intensely suicidal while the latter are not. This will not be apparent at a glance, but the history and the evidence of attendants will afford information. More difficult is the diagnosis when we have to compare one of the cases of primary dementia with a chronic dement of perhaps the same age. Everything here will depend on the accuracy of the history we receive. The appearances in the two patients may be identical; both may be lost and dirty, idiotic in face, incapable of giving a rational answer or any answer at all. But if we hear that in one this condition has come on recently and rapidly, the result of a shock or fright or some bodily illness, and if the physical condition is also recent we may pronounce favorably as to the termination. If, on the other hand, the dementia is secondary and the outcome of an attack of mania or melancholia, or the result of many epileptic attacks or apoplexy, the diagnosis admits of no doubt and the prognosis will be most unfavorable. We must not be misled by the accounts given us of the duration of the disorder. Friends will keep patients at home without treatment of any kind if they are tolerably manageable, and will let them drift on and on till they arrive at a state of hopeless and incurable dementia. Driven at last to consult our profession, they will minimize the time during which the disorder has been apparent, and because the worst and most extreme symptoms have only existed for perhaps a few weeks, they will give this period as the beginning of the whole to excuse their not having called in assistance earlier, and to extract a more favorable prognosis from us. We must not be deceived by such methods. Only when the case is recent and primary is the sufferer likely to emerge therefrom.

What can be done to cure these young patients and where is the treatment to be carried out? An asylum is not absolutely necessary for they are not suicidal, violent, or noisy. If treatment can be properly enforced in a private house, the patient can remain there and so avoid the additional shock or fright which removal to an asylum may cause. What is most needed is constant personal attention; merged in the crowd of a large pauper asylum, they are very likely

to sink into phthisis. The requisites are warmth, warmth which to some would be excessive, abundant food and stimulus, such stimulus as may come from shower baths or galvanism, and enforced exercise or massage. Stimulants also, as wine or stout, will be required in many cases, and as improvement takes place and the patient wakes up, moral treatment in the shape of change of scene, drives, and walks will be highly beneficial. Tonics also will be required, iron, arsenic, or strychnine, or combinations of all or any of them. Above all care must be taken that these young people do not masturbate. This habit may have played a considerable part in the production of the nervous prostration, and will if indulged effectually prevent recovery. In the extreme state of vacuity it may not be found. The individual is too lost to give way to it, but when the strength increases, he is very likely to return to the habit and it must be prevented; even mechanical contrivances must be used or the hands must be fastened. Menstruation in girls is sure to be absent while they are in this state of prostration, and friends are glad to assign it as the cause of the disorder. It is only a symptom, however, of the general condition, and as this improves so will the catamenia reappear. Then the friends are disappointed if there is not an immediate return of mental health. The two are not dependent the one on the other, but both on the nerve weakness, and the mental improvement may not be simultaneous. It need hardly be said that these young patients are by heredity prone to nervous disturbance, a fact which the friends will try to conceal in every way, and to erect something else as the predisposing cause. And when our prognosis is not borne out by the result in an apparently favorable case properly cared for and treated, the reason is that the hereditary weakness is so pronounced an obstacle that our treatment cannot prevail against it, and the patient sinks into incurable dementia.

Much controversy has arisen with regard to the name which best fits this disorder. Some writers, among them M. Baillarger, have pronounced it to be nothing more or less than *melancholia cum stupore, melancolie avec stupeur*. And they have based this opinion on the fact that on recovery the patient has recollected some gloomy idea or delusion which he had at the beginning of the attack. But such gloomy delusions often occur in the commencement of very acute mania or even general paralysis, and we do not call these disorders melancholia on this account. The old term "acute dementia" is, after all, not inappropriate, meaning by "acute" a primary and recent in contradistinction to a chronic disorder. No doubt cases will be found which do not warrant this or that name. But there are many which cannot be ranked under the head of stupor. A girl in

perpetual motion cannot be said to be in a state of stupor, neither can one who violently and obstinately resists everything that is done for her. Another term is "cataleptoid" insanity, but it is not applicable to many cases. Yet they all appear to be demented, whether they are in a cataleptic and trance-like state or in one of silly chatter and grimace. Primary dementia, to distinguish it from secondary and chronic, seems as good a name as any. The French term *stupidité* is better than stupor, but this is not adequately translated by our word stupidity.

Acute Delirious Mania.

The patients suffering from dementia, whether primary or secondary, may fitly be placed at the end of the scale of insanity. Their nervous force is in extreme defect, the mind is a blank, and the physical condition and circulation closely correspond with the mental. At the other end may be placed those now to be described, patients whose malady is spoken of as sthenic, who are in no way prostrate or depressed but in good bodily health, yet whose nerve centres are in so unstable a condition that some cause, perhaps trifling in itself, destroys the equilibrium, reduces the control of the higher, and allows the lower centres to explode in the most violent delirium. The instability of the nervous centres of such people is the main factor in the history of the disorder. Many are young; they have not encountered the cares and worries of life, neither have they suffered from any wasting disease. They are predisposed and prone to disturbance of the nervous system, and symptoms of mental trouble may come on very rapidly. Such causes as a shock or fright, a violent quarrel, a sudden disappointment or piece of bad news, anything, in short, which produces great and tumultuous feeling, may upset the mind and symptoms of acute delirium may show themselves, perhaps in a few hours. On the other hand, the exciting cause may be physical. The delirium may arise in the course of febrile disease, or during the decline of such maladies as pneumonia, measles, or typhoid fever. It may be the result of fatigue, even such as a long walk. It may follow epilepsy or childbirth, may alternate with rheumatism or gout, or arise after a period of hard drinking.

Its onset, on the other hand, may be more gradual and commence with a certain stage of depression followed by the excitement of mania, this becoming more and more acute till it ends in the delirious condition about to be described. In these individuals the cause is sometimes entirely obscured; the beginning is very gradual, and friends looking back can hardly lay their finger on the exact time

when they first noticed anything wrong, and they are unable to fix the cause, the real factor being in all probability the hereditary taint which renders the nerve centres extremely unstable.

As these attacks frequently come on suddenly without any preliminary symptoms, so may they as quickly subside. In the delirium of alcohol which we call delirium tremens, one good sleep restores the brain equilibrium and the patient recovers; so in some of the attacks following febrile disorders the recovery is nearly as rapid, as it is also in cases in which a physical cause, as fatigue, has existed. If the disorder is likely to be transient there is no need to send the patient off at once to an asylum, and time should be allowed and remedies tried before such a step is taken. The prognosis here is all-important, and various points must be taken into consideration, such as the age, constitution, and previous history of the individual, the duration of the symptoms and probable cause. The patient who, by reason of his unstable equilibrium, is most likely to be upset by a slight cause, may for the same reason easily regain his normal state. Therefore if we hear of a marked family neurosis we need not on this account despair of averting a prolonged attack. There may have been previous seizures of the same character of which we shall be told, and these have been transient. The symptoms may resemble those of hysteria, there being evident consciousness in the midst of the delirium, and an absence of raised temperature and rapid pulse will cause us to give a favorable prognosis and try if the disorder may be brought to a speedy termination.

How is this to be done? The first thing and the most important is to procure sleep. If the patient is allowed to drift on day after day without sleep, a prolonged attack will surely be the result. In the old days opium was the only narcotic, but opium in this form of insanity is likely to do more harm than good and prevent sleep rather than promote it. But there are in the present day many drugs which may be tried; there is chloral which, in combination with bromide of potassium, is probably as good as any. Also, we have sulphonal, trional, tetronal, and paraldehyde. And besides these there is hyoscine, of which more will be said elsewhere. If by means of one of these drugs a good sleep is procured, the delirium may cease and the mind become clear in a short time. Good effects also may follow the administration of a brisk purgative and the attack may be ended by the effect thereof. Sleep, too, will be encouraged by a warm bath,—not a mere plunge into warm water, but a bath of at least half an hour with cold to the head. Sleep will often follow this, and there is also the wet pack; the patient is packed in a sheet wrung out of hot, some say cold, water, which promotes sweating and by restraining all motion

allows sleep to come. For there is no doubt that the depriving the limbs of motion adds materially to the rest of the brain, a fact which the advocates of non-restraint in all and every case entirely ignore.

If sleep comes by means of these methods and is repeated the next night, and the delirium ceases and consciousness returns, we may be confident that the disorder is transient, and that care and quiet will bring it to a happy end. But if our medicines procure less and less sleep, if there is great excitement on waking and less consciousness, and if the delirium becomes wilder, it is evident that the attack is not transitory, and we have to deal with a case which will last not for days but for weeks, and will tax all the resources of nurses and attendants as well as of physicians.

The first question is, where is such a person to be treated? I have treated many of them in their own or in houses taken for the purpose; but here, as in melancholia, it is unwise to adopt this method unless the means and the will of the friends allow of an adequate expenditure for the purpose. If the patient's own house is unsuitable because of the other inmates, or because the noise made by him cannot be tolerated, a suitable house must be taken, and a room specially prepared for his reception, which should be large enough to be airy and cool when three or four people are in it. The windows may be guarded by strong laths nailed across so as not to exclude air and light, allowing them to open, but preventing the patient from dashing himself against the glass, and the sun and light must be excluded when necessary. Scarcely any furniture should be left; a bedstead is not required, for the patient will not lie on it quietly, and attempts to compel him will cover him with bruises; and articles of furniture, as chests of drawers or washstands, he will jump upon or drag about the room, and endless battles will ensue. In short, it should resemble as much as possible the strong room or padded room of an asylum, having the advantage over the latter of being larger and more airy.

In such a room, whether in or out of an asylum, the patient must be nursed through the acute delirious stage, and everything will depend on the skill and care of the attendants to whom we confide the case. In a prolonged attack of this severity mechanical restraint is out of the question; the patient would become exhausted by a continual struggle to get free, and exhaustion and not sleep would be the result. There will be incessant restlessness and motion, incessant chattering, singing, or shouting. Sir J. Crichton Browne has drawn attention[1] to the movements of patients in this delirious mania. Some will run about night and day in a purposeless manner. These he thinks may be suffering from irritation of the posteroparietal lob-

ule of the brain, in which Ferrier has localized the crural movements. Others will toss their arms about incessantly, or busy their hands with the bedclothes. In these the irritation may be concentrated in the ascending frontal and parietal gyri, in which the brachial and manual movements are localized. "Some talk vociferously and jargonize. May we not infer that in them there is an irritative lesion of the orolingual region in the third frontal convolution? Others are resolutely silent, but shake their heads from side to side without intermission. May we not suppose that in them the cortex of the superior temporosphenoidal gyrus is hyperæmic or inflamed?" In the same way Sir J. C. Browne conjectures that hallucinations of hearing, sight, taste, smell, or cutaneous sensibility may be indicative of lesions of the various portions of the cortex which correspond to these senses. Similarly also the higher and inhibiting centres may be not stimulated but paralyzed, and the subordinate or motor centres let loose, so that incessant automatic movements are the result. This seems to account for such movements rather than overstimulation of the lower centres. It is the control of the higher that is wanting, and the lower automatic, freed from this control, continue to act till exhaustion brings them to a close, or the higher recover and regain the mastery. This is well seen in the progress of a case towards recovery. At first there is entire unconsciousness and delirium. Then for a moment or two we are able to arrest the automatic noise and movement, and during this moment the patient may answer a question, greet us by name or gesture, and then at once return to the delirious state. By degrees these intervals of consciousness become longer and there is a greater capacity of attention, and, as the higher centres are strengthened, so do the lower fall under their sway, and the talk and movements are not automatic but the outcome of reason and will.

The talking will be, for the most part, an incoherent jumble of words and sentences, the letting loose of all sorts of partial ideas and confused thoughts and sights from the stores of memory. Odd scraps of poetry, languages long forgotten, places and people which have not been seen for years, are brought out and tacked together in most admired confusion. Definite delusions hardly exist, for the mind and centres of delusion are too obscured for anything so definite, but hallucinations of the senses are not uncommon, and the general emotional state of the patients will vary, some being gay and hilarious, some angry, some panic-stricken, and without actual delusion it is easy to recognize the prevailing emotion in the expression and gestures. Our prognosis will be considerably affected by this emotional condition. Gaiety and hilarity are good signs, anger and suspicion

the reverse, and the terror-stricken panic of some brings them into the class already mentioned of delirious melancholia, of which the prognosis is most unfavorable.

As the automatic action of memory lets loose the string of jumbled names and ideas which we so constantly hear, so does the same automatic condition lay up in a confused and jumbled way that which is going on around, and it is always wise to caution attendants not to say anything before the patient which they do not mean him to hear and remember. A good deal is often remembered, especially of what has happened at the commencement and decline of the attack, but the memory is blurred and untrustworthy, so that we cannot receive all that is told us by a patient as true, and it is often very difficult to come to a decision when accusations are made against those who have had the charge of any one during such an illness.

The physical condition of such people varies very much, women being able to withstand the acute stage better than men. They can go without sleep for a much longer time, and the violence and restless agitation do not produce the same exhaustion or the fatal typhoid condition so often seen in men. The first question of prognosis is whether the patient will live or die, and this will turn upon the amount of sleep, the condition of pulse and tongue, and the temperature. In the old days when opium was the only narcotic, patients often sank and died for want of sleep, and the opium or morphine frequently hastened their death instead of preventing it, but nowadays we have more appropriate remedies, and death from mere want of sleep is rare. The less medicine required the better will be the outlook, and any natural sleep, however short, is a good sign. Some are much more violent than others, will not lie down, but are continually rushing about and struggling with those in charge of them. In this way they take much out of themselves and soon become exhausted. If we can see the tongue we may gain valuable information; if it remains moist and comparatively clean, as it often does even amidst great excitement, the prognosis will be favorable; but if it becomes dry and brown, and the lips and teeth are covered with sordes, the gravest opinion must be given; this brown and dry condition of tongue in former days was, I am convinced, frequently brought about by the injudicious administration of morphine. The temperature does not rise to fever heat, though it will rise somewhat. Bevan Lewis says it is always raised more or less, sometimes to 102° F., but I recently have seen a young lady in very acute delirium where it was slightly subnormal. There are various minor points to be observed. If the reduction is so great that everything is passed involuntarily, it is a bad though not a fatal sign, and the ease or the

difficulty with which a patient is fed must enter largely into the judgment which we form as to his future. The pulse too must be taken into consideration. Like the temperature, it is often not greatly raised in frequency, even when there is much excitement and great muscular exertion. But a rapid pulse is a bad symptom, especially if it continues while the patient is comparatively quiet; for the violence and outbursts of noise and movement in these cases are generally paroxysmal and not continuous. After a period of unrest there comes one of rest, and if in this the pulse falls to some point not much beyond the normal, the prognosis is good; if it remains rapid and the temperature also is high, which it probably will be, the termination is likely to be fatal.

The urine of such persons will be scanty, high-colored, and offensive, unlike that of patients suffering from hysterical mania, which is copious and pale. The bowels will not act without aperients or enemata, and the motions are generally dark and offensive. There is also in many cases an overpowering odor from the skin, especially in women. Appetite is wanting; some will refuse their food strenuously, but, unlike those suffering from acute melancholia, the majority will allow themselves to be fed; many suffer greatly from thirst, especially in hot weather, and will drink with avidity, and much food may be got down in the shape of drinks.

Whether we have the patient in an asylum or in a room prepared for him in a private house, the treatment must be the same. We have to prevent him sinking from exhaustion produced by this most acute disease, for there is nothing fatal in the disease itself; hundreds recover from it, some many times. It is exhaustion that kills, the patient's strength not being able to meet the tremendous demand which is made upon his nerve force, for the renewal of which his sleep and nourishment prove insufficient.

Everything, therefore, turns upon his obtaining sleep and food to repair the waste. We cannot hope in this stage to procure a long night's sleep by drugs unless we give something so potent as to cause great risk. But short sleeps are enough to save life in the majority of cases, and various medicines may be given for this end. That in which I have the greatest faith is a combination of chloral and bromide of potassium. The latter is of no use by itself and only depresses without procuring sleep; the action of the former, however, is promoted by the combination which is more useful in such attacks than sulphonal, trional, or paraldehyde. By it we may procure sleep of one, two, or more hours' duration, which is all-important. It should not be given frequently; one or two doses in the twenty-four hours are sufficient, and it is useless to give less than thirty grains of

each. If this dose loses its effect, and sleep becomes shorter and not longer, it is a good plan to change the medicine rather than increase the dose; a new medicine often has a beneficial effect, or we may stop all medicines and see whether sleep will come without them. Another drug which is sometimes used in these attacks is hyoscine, which is preferable to its earlier congener, hyoscyamine. Hyoscine is a very powerful remedy and requires great caution and watching. Those who have most experience speak of its danger, and even gr. $\frac{1}{200}$ has caused death. It is usually given hypodermically, the dose being from gr. $\frac{1}{200}$ to gr. $\frac{1}{100}$ increased to gr. $\frac{1}{75}$ or gr. $\frac{1}{50}$. Given by the mouth it appears to have little effect. It may be administered in asylums to patients who are strong and not in any way exhausted, where there are resident medical officers to watch the result, but I should not like to give an injection to a private patient and leave him or her to attendants only. The recollection of many hours spent in performing artificial respiration on a lady who had received an injection from a medical friend is still very vivid in my mind. After the height of the attack has passed and we cease to be anxious about life, I find often that it is a good plan to stop all sedatives and narcotics and let natural sleep come, even if it be scanty. There is a stage when a good night's rest procured by drugs seems to set the patient up and perpetuate the mania and delusions day after day. A less amount of natural sleep does far more to clear the mind.

Almost as essential is the feeding of such people. They do not as a rule refuse food; few require feeding by the tube, and good attendants will take advantage of the intervals of quiet which occur in most cases, and will get down a considerable quantity of food, semi-solid or liquid. I care little for beef tea, which not unfrequently causes diarrhœa, and still less for any of the meat essences or juices so largely advertised. Milk and eggs are the two most nourishing things that can be taken—two eggs, yolk and white, to each half-pint of milk, and as many of these half-pints a day as can be got down. Chopped or pounded meat and vegetables, or the juice of vegetables, are useful when we can get them taken in addition to the milk; and also cooling drinks, as lemonade or orangeade, if there is great thirst in hot weather. Unless there is great prostration, brandy and wine are not required. They excite and dry the mouth, and, if given at all, should be well diluted. Needless to say there is enormous waste in this disease and patients lose flesh rapidly, but this will soon be repaired when convalescence commences, and the abstraction of a quantity of fat is an immense relief to the heart.

Besides food and sleep rest is essential to these persons. They should not be allowed to stand all day and exhaust themselves any

more than the acutely melancholic. On the other hand, continuous mechanical restraint in the form of fastening them on a bed is equally out of the question, though one often meets with it in patients kept at home in improper rooms. Skilful attendants will prevail upon a patient to lie down for a portion of the time on the bedding or mattresses prepared on the floor, and such recumbent posture in a darkened room may very likely induce sleep. Such people will tear off any ordinary clothes, but if a strong suit, jacket and trousers or petticoat, made in one piece and laced up the back, be procured, any quantity of body linen may be placed under it; or a strong blanket may be fastened round the neck and shoulders to form a kind of poncho. If this is fastened round the upper arms they will not be so available for mischief, and yet there will be no irksome restraint, and by it they can easily be held without the infliction of any bruises. When quiet and recumbent, cold applications to the head are often very grateful in this delirium, and may cause the patient to fall asleep. And there is another remedy largely used in France, namely, the continuous hot bath. This has been used in that country for ten, fifteen, or eighteen hours at a time, but is not without danger. Dr. Clouston mentions a man who died in the bath while he was sitting beside him, after being less than an hour in water at 103° F. He had not detected any heart disease, but one must bear in mind that in all these cases of acute delirium there is a great strain upon the heart, and it may become weakened during the course of the disorder. In patients who have had repeated attacks we almost invariably find the heart dilated and the right side thinned. But a warm bath at a temperature of 92° or 93° F., with cold to the head, for half an hour is often most efficacious if it can be administered without fighting or struggling. Much will be absorbed by the skin, the fever and thirst will be allayed, and that which is lost by the profuse perspiration will be replaced.

The prognosis of this formidable disease is not in my experience unfavorable if suitable treatment is adopted. A patient strapped down to a bed in a hot room, and fed by ordinary sick-nurses wholly inexperienced, will probably die, and many are kept like this for a long time and at last sent to an asylum in such a state of exhaustion that proper treatment comes too late. In the first attack all ought to recover, unless they are enfeebled by previous disease or some other cause. There is more anxiety about men than women; they do not stand the strain so well, are more violent, resist interference more strenuously. The termination is almost invariably recovery or death; sometimes after the long delirious struggle the patient becomes quiet, but it is the quiet of coma, not of sleep; the circulation in the brain

becomes impeded by the products of waste which cannot be carried off, and effusion and coma follow. But fortunately this is not the usual termination. Sleep comes either from our drugs or naturally, the waste ceases and the waste products are carried off, the crisis passes, and the mind in time clears. For this a short period may be sufficient, and a patient after a most acute attack may leave the asylum in a month "recovered." On the other hand a much longer time of convalescence may be required. After the delirium there is often a long stage of dementia from which the sufferer slowly emerges, if his nerve force is equal to the recuperative effort. Some do not, and remain permanently in a state of chronic mania or chronic dementia; these are the weakly, or patients who have had repeated attacks; from the early ones they recover, but as time goes on and age increases, there comes one from which they do not emerge, but either die or sink into a condition of chronic insanity.

This disease can hardly be mistaken for another, though there are many in which violent delirium occurs. There is the delirium of alcohol, commonly known as delirium tremens, which is in truth a delirious mania, and, if very acute, may simulate in many respects that which has just been described. The history here is important, but we may not always be able to obtain it if a patient is taken ill at an hotel or away from friends. There are points of difference, though they may not be constant. Hallucinations of sight are among the commonest symptoms of alcoholic delirium, the patients are said to "see snakes," and they do this constantly, together with rats and such things crawling on the bed, but these are rare in delirious mania. Hallucinations of hearing, too, are more common in the former than in the latter, though not so frequently met with as those of sight. And the muscular tremor which has given its name to the disorder is not found in delirious mania. This is quite peculiar, and is due not to the delirium, but to the alcoholic poisoning, and may be noticed in drinkers who have no delirium. I have seen a gentleman perfectly sane whose servant had to hold the brandy and soda to his mouth because his trembling hands could not raise it. Knowing that delirium tremens runs a short course, and that patients generally recover or die in a week, we do not remove them to an asylum. The delirium which arises in the course or decline of febrile disorders, as measles or pneumonia, is generally transitory and rarely becomes a prolonged and severe attack. Very severe delirium occurs in the course of fevers such as typhoid, with delusions and violence equal to that of delirious mania, but the history and onset of the illness ought to leave no doubt as to the diagnosis, even if we had not the thermometer to aid us. Such patients do not struggle to get out of

bed; fever-stricken, they have not the strength of the maniac. We may meet with delirium in those who are suffering from acute disease of the brain, as meningitis, or it may come on after a succession of epileptic attacks, but in neither of these can the diagnosis be doubtful.

The naked-eye appearances after death are less than might have been expected in a disorder so acute and so rapidly fatal, yet the tale they tell is one of violent overaction, and is what we should expect from the symptoms. There is engorgement of the sinuses and veins, congestion of the pia mater, opalescence of the arachnoid, even effusions of blood from the rupture of small vessels between the membranes. "The cells soon get granular; there is a proliferation of the nuclei of the neuroglia, the lymphatic spaces and perivascular canals soon get overdilated and blocked up with débris, and an enormous number of microscopic capillary extravasations take place in and around the convolutions in bad cases."[48] The result of all this blocking is the serous effusion so often seen ending in coma and death.

Mania.

The condition known as mania is included by some eminent authorities among the states of mental exaltation (Bevan Lewis, Clouston). Others, as Maudsley, call it insanity with excitement. Excitement is a vague term; there is excitement in melancholia as well as in mania; neither does every case of mania display exaltation. Anger, suspicion, and hatred are developed in some without any of the joyous hilarity or grandiose ideas which characterize others. It has been said with truth that almost every case of mania commences with a stage of depression. The morbid process of reduction here is not great. The patient, though depressed, can talk rationally about things which do not concern himself, can even transact his business in a fashion and behave himself decently before all men.

But if his disease advances, not in the direction of melancholia but of mania, what do we find? His highest brain centres, the seat of the highest intellectual operations, are enfeebled, and continuous or concentrated thought is impossible; though there may be no actual delusion, he rambles in conversation and ideas; we cannot keep him to the subject or get a plain answer to any question. Not only are his higher centres incapable of steady and continuous exertion, they are equally unable to control the lower centres, which, raised into activity by the loosened subject-consciousness, show an entire change of feeling resulting in extravagances of the whole conduct of the individual. If we could look at the brain at work and note

the action of the cells and fibres, we should no doubt discover that the mischief is in the highest centres, and that their defective action and loss of control give rise to the change in the feeling and conduct and to the almost automatic action of the lower. Although there may be overaction and hyperæmia in the latter, the very reverse may be going on in the higher. This is shown by the deterioration not uncommonly seen in old people. The higher intellectual portion of the mind is weakened by age, but this weakness is not manifested by failing memory or childishness. This stage is not yet reached, yet we find a change in the conduct and moral sense, and a man who has hitherto borne the most blameless reputation sinks into licentious profligacy or sottishness. In the young this weakening is brought about not by age but brain disorder, and gradually is evolved the spectacle of a change in habits, disposition, and conduct which bewilders the friends and is of a character which can perhaps be hardly called insanity in the early period of its incidence. Nothing is so common as to hear of a total change in the feelings and conduct. The patient talks volubly, much more so than usual, rambles from subject to subject, acts or talks in an improper manner, and justifies all he says or does. There may be no actual delusion, unless this justification of insane acts and inability to see that there is anything wrong in them can be called one. Here is most clearly manifested that want of adjustment between the individual and his surroundings which has been considered to be the essential characteristic of insanity. The environment remains the same, but the change is in the patient. This he cannot see, and he falls out with all around him and accuses them of the change, or indulges in insane and extravagant conduct and quarrels with those who remonstrate.

The contrast between this stage of mania and the early stage of melancholia is great. The melancholic man is depressed, anxious, and gloomy about himself and his prospects, but apart from himself his mind is clear and memory sound, and he can give us a clear and rational judgment on a point not connected with himself. The maniacal patient cannot collect his thoughts or fix his attention. His ideas flow with great rapidity and equal confusion, and delusions, if they arise, vanish and are replaced by others which reflect the humor and temper of the moment.

The treatment of these people is often a matter of great difficulty and requires much care and caution. If there has been a prior stage of depression, the appearance of pleasurable emotions and joyous hilarity will be hailed with delight by the friends as the passing away of the cloud. But by degrees the hilarity becomes insane excitement, bringing with it insane conduct. It is evident that some control is

necessary, and the question arises, how is this to be applied? Such patients are not docile and tractable as are so many of the melancholics, who require to be watched and fed, but wish to do nothing save commit suicide. These are ever in movement, active and restless, incessantly talking in the most egotistic manner, reckless in expenditure, and prone to indulge in drink, of which a comparatively moderate amount may produce a great aggravation of the symptoms. To get such patients away from home is the first thought, and it should be done if the requisite means are forthcoming. They must be where extended exercise in the open air is possible, and there must be attendants or companions, not less than two, who can carry this out. They should not be cooped up in a vessel for the sake of a voyage, or kept in a town to walk in busy streets. The country or the hills and mountains are the place for them, and the change of scene and separation from the former environment with prolonged exercise will in favorable cases work a cure. Plenty of food is required and little stimulant. Sleep will be defective, but although an occasional dose of chloral and bromide or sulphonal may be given, there is not much good to be so derived, and it is better to trust to the exercise and fatigue produced by walking rather than to drugs. In the case of women there will be the same need of exercise and change, but the walks need not be so long, or so remote from towns, if the patient's demeanor is orderly and does not attract attention.

Such treatment may not be possible on account of the want of funds, or the disorder may advance rapidly, and instead of talkative excitement and changed conduct and feelings, a truly maniacal reduction may rapidly supervene, and we have to deal with an acute mania which is very difficult to treat anywhere except in an asylum. This is not acute delirious mania, for there is no delirium; these people are perfectly conscious of what they are about, are mischievous, wet, and dirty, in order to give as much trouble as they can; they will do everything they can to irritate and provoke the attendants, and will then complain and invent ingenious lies concerning them. They are abusive, filthy in language and acts, and will destroy clothes, bedding, or furniture.

The insanity of some is shown in outrageous conduct and language, others have numerous delusions and hallucinations which frequently change and vary much in character. Many can talk coherently for a short time, then ramble off and get excited, and sing, shout, or make rhymes. Their language is often very obscene, and both sexes will practise self-abuse in the most open and shameless way.

There is not the same anxiety about the bodily health in these

cases that there is in acute delirious mania, where a patient may die of exhaustion in a week. They seldom die in the attack, unless the strength is impaired at the outset by some other disease, or unless it is gradually worn out by the long duration of the malady. Sleep is not entirely absent, even if we give no medicines, and more can be procured by them. The tongue will often keep quite clean in spite of the incessant chatter and singing. The pulse will not be quick when the patient is quiet and there will be no rise of temperature. There is no difficulty with the food, which often is eaten ravenously; it may be messed and thrown about, but will not be refused for any length of time. If a patient does not take it to-day, we can afford to let him wait till he is hungry, feeling confident that to-morrow he will take as much as we will give him.

These persons are too noisy and destructive for any private house. They are not sick patients to be kept in one room and nursed, but beyond all others they require the grounds of an asylum where they can be walked about by attendants and kept out of doors for a good portion of the day. To give them a sufficient amount of exercise anywhere else is impossible. Their habits may require them to wear an asylum dress, which they cannot remove or destroy, and their language and demeanor would make it impossible to take them abroad on the most unfrequented moor or mountain. Yet exercise they must have, and with this they will sleep, and sleep thus procured is far more valuable than that which follows drugs. Friends who object to asylums try to keep such at home, probably at the top of a house, not unfrequently fastened on a bed to prevent them rushing to the door or window. I saw a young lady lately who had been so fastened down for a month. She recovered in a few months in an asylum, but her recovery would have been more rapid had she been removed thither at first. Patients kept at home in this way are sure to be vigorously dosed with drugs. The friends attach the greatest importance to the amount of sleep procured, and all the medicines in the pharmacopœia are tried often with little result.

Are narcotics ever to be given? In some cases they do good in occasional doses, preventing the waste of tissue and procuring some sleep and rest. Frequently a dose given every other night or every third night is sufficient. The effect appears to be prolonged over more than one night; with sulphonal, in fact, there is often more sleep on the second than on the first. But I have observed that at a certain stage drugs given every night, even if they produce five or six hours' sleep, prolong the malady and do not cure it. The patient is refreshed by the sleep, but the mind does not clear and the confusion and incoherence remain unchanged. If the bodily health is fairly

good and we are not anxious about life, it is a good plan to stop all sleeping medicine and let the patient get what sleep he can without it, when mental improvement often follows. More strongly still is to be deprecated the practice of dosing such patients with enormous quantities of the bromides, not to make them sleep but merely to quiet and make them more easy to manage. To prolong this treatment for perhaps weeks at a time is to reduce the strength, to cause great emaciation, and to unfit the sufferer to weather the storm. Moral treatment is not to be overlooked, and this can be applied far more efficiently in an asylum. The patient is to be encouraged to be of good behavior. He will always be wanting or asking for something, but his obtaining it will depend on how he behaves. Complaints that he makes against attendants can be investigated on the spot, and if he accuses them of striking him, the mark can be looked for. But the care of such people in a private house, without any responsible head, is attended with the greatest difficulty. Mechanical restraint is not only of no use but will do harm, increasing the excitement and provoking a constant struggle; it may be useful sometimes to place a pair of locked gloves on the hands to break through the habit of destroying clothes, but these merely prevent the free use of the fingers and do not confine the muscles of the body or incite resistance.

What is the prognosis? In acute delirious mania the question is, will the patient live or die? if he lives, he will almost certainly recover. Here it is not so much the question of life as of recovery. These people are for the most part young and in fair bodily health, and in a first attack they almost all get well. The points to be considered are, first, the length of the illness. Has it lasted a long time, upwards of a year without improvement, and is it therefore likely to become chronic? Patients sometimes get well even after a longer period, but after a year in most cases the outlook is not encouraging. Secondly, are there any unfavorable symptoms, such as hallucinations of hearing? If a patient loses the very acute maniacal state, but continues to hear "voices," and is violent on account of what these voices say, the prognosis is bad. So, too, the character of the delusions may tell us something; if they are of an absurd nature and constantly changing, we may have hope, but fixed ideas, such as the delusion of conspiracy and persecution, are hard to eradicate. Previous attacks must be inquired into. A patient may recover two, three, or four times, and then have one which is more severe and prolonged from which he may not emerge; but the fewer there have been, the better the prognosis. We must find out if the maniacal excitement has followed a long period of depression, which in its turn followed a

stage of excitement, the case being one of alternating insanity, the *folie circulaire* of the French. If this has happened before, it probably will again. The mania will pass off to be succeeded by melancholia, there being possibly an interval between the two in which the individual may appear to be perfectly well.

How is the prognosis affected by the knowledge that the insanity is hereditary? In young persons acute mania is almost always the outcome of inherited constitutional instability, and grave fears are entertained on this account. We do not find, however, that this prevents recovery in the early attacks. They recover, break down, and recover again, but in later life this inherited taint may stand in the way, and the patient may sink into chronic mania or even dementia, to remove which our efforts avail not.

Recurrent Insanity.

At the close of an attack of insanity, whether mania or melancholia, we are sure to be asked if it is probable that the patient will have another, and if so, at what date. Unfortunately our answer will be that it is probable, the probability depending very much on the inherited tendency and on the origin of the first attack, which may or may not have been acquired. The nervous centres of the brain which have once been reduced to the condition of instability that connotes insanity do not thereby acquire an immunity from subsequent reductions, but on the contrary are more and more sensitive and liable to lose their equilibrium from various causes. The return of the disorder, however, may be long delayed. The patient may pass from youth to age, to the time of the climacteric or later, before any mental disturbance shows itself. This return after so long a period, due perhaps to a special and sufficient cause, is not what is meant by recurrent insanity. In the latter there is a periodicity, and that there should be a periodicity in this disorder is not surprising, for all nervous disease is periodical. Epilepsy is especially so; we cannot tell why the fits recur except that the time is come when they must recur. Neuralgia, migraine, neurotic gout, epileptiform tic, all recur with more or less regularity. Some cause is assigned often without reason, and when the disease departs, some remedy equally without reason gains the credit of a cure, but the recurrence takes place with the same regularity. In every asylum we find patients or habitués in whom the recurrence is a marked feature. Some recover and rejoin their friends, and an interval of two or three years may pass before they again break down, an interval of perfect sanity or one clouded with the alternate state, excitement following depression, or a depressed

feeling coming after an attack of mania, yet neither necessitating special care and treatment.

I have known patients, men and women, who went through a long life in these recurring illnesses. One at present under care is eighty-five, and her insanity began with epileptic fits when she was in the adolescent period. Yet fits have not been a feature for many years; now and then, perhaps once in four or five years, one may occur, but it is not an epileptic case. In the two longest cases I have known the first attack happened in adolescence, but Bevan Lewis says that "these recurrent forms are far more prevalent in adult life, and increase gradually towards the decline of manhood and womanhood. In men quite one-half the cases of recurrent insanity occur after forty years of age, and out of a total of sixty-six individuals so affected, forty-nine had passed their thirtieth year of life; similarly in women, we find that nearly half the cases cover the period of life between forty and fifty-five, which may be safely taken as the limit of the climacteric period. In fact the period of life between forty and sixty years in the female is peculiarly susceptible to this form of mental derangement, being the period involved in sexual decadence and the advance of senility."[49]

In my own experience I have found the first attack occurring at an earlier age than forty, both in men and women. The intervals in the commencement of the disorder were long, and threatened returns were warded off by treatment, but as time went on the intervals became shorter and treatment availed nothing, the insanity becoming more marked and each attack running a longer course. After a series of recurrences with short intervals and symptoms of great severity, recovery does not take place. The mind gives way before the constantly repeated strain, and organized changes take place in the brain centres. Instead of rejoining his family or friends after each so-called recovery, the patient remains a permanent inmate of the asylum. Yet even in the demented state the periodical attack of mania will recur with the utmost regularity, and every feature of the preceding illnesses will be reproduced. The period of the return may vary greatly; some I have known who were melancholic or maniacal with the greatest regularity on alternate days, and in an ordinary attack of insanity it is not unusual to find a patient alternating and having "good" days and "bad" days with considerable exactness. Wherever there is regular recurrence, whether of the same kind of attack or of the circular or alternating form, the prognosis is most unfavorable. It may be assumed that in all, especially in those who begin young, there is a strong inherited tendency to neurotic disease. This, says Bevan Lewis, is more often atavic than direct, its frequent

appearance in the collateral line of uncles and aunts being strong presumptive evidence in favor of an atavism, even where no other record exists. In these predisposed persons various causes may light up the mischief. Masturbation, gestation, or parturition, or alcoholic indulgence may be the origin, but subsequent attacks may have much slighter or even no assignable causes, the unstable nervous system losing its equilibrium almost by the lapse of time.

Can anything be done to stop the recurrence of these attacks of insanity or the alternating cycle of melancholia and mania? There is plenty of opportunity for making a trial, as we may have a long life during which to experiment. Yet I am not aware of any treatment which can be relied upon. Certain obvious causes must be avoided, especially alcoholic excess. Persons who have been insane, and are consequently unstable, are affected by a small quantity of drink, as also are those who have received blows on the head, and the latter is not unfrequently the exciting cause of this recurrent insanity. I have found change of scene postpone the return but not prevent it. The innate and constitutional vice is not to be overcome by mere change of environment or rest from work. In spite of all we can do, the seizures recur often with great and dangerous violence, the patients having numerous delusions, hallucinations, and morbid impulses, which are reproduced on each occasion with wonderful uniformity.

Monomania.

There are various patients, in and out of asylums, who are not greatly depressed, nor violent or excited. At first sight and in ordinary conversation they may pass as sane people, and they form the class which has been termed by lawyers the *partially insane*. Their minds, however, are not sound. On some point or other of idea or conduct insanity is manifested, if we have the opportunity of discovering it, and according to the nature of the defect and the resulting conduct it may be necessary to confine the individual in an asylum, or possibly to give him a considerable amount of liberty in an ordinary house. These partially insane folks arrive at the point of delusion in one of two ways. Of an insane temperament, prone by constitutional inheritance to be suspicious, or jealous, egotistic, and selfish, or nervously timid, they advance to a delusion which has grown out of one or other of these idiosyncrasies. This, which is a primary monomania, has received from some the name of paranoia, a word which in its origin conveys no special meaning, for it only means derangement of mind, and is calculated to throw not light but obscurity on the nomenclature of mental disorder. The cases in which

delusion is arrived at as a primary symptom, and which stop there without other symptoms of insanity, are comparatively few. Far more common are those in which the monomania is secondary, having followed an attack of mania or melancholia, in which the flood of fancies and surging ideas has crystallized into one spot which remains fixed and immovable for a long period, perhaps forever. The acute symptoms have long ceased, the cause is forgotten, the deep depression has passed from the melancholic, and the exaltation or hilarity and swagger from the maniac, but there remains in each a fixed belief, of the falsity of which he cannot be persuaded either by his own knowledge and experience, by the evidence of his own senses, or the demonstrations and declarations of others. He may be able to lead the life of an ordinary sane man if his delusion does not render him greatly out of harmony with his environment. But it may render him dangerous to himself or others, and then it will be necessary to place him under care and treatment.

It may be well to examine some of these varieties of monomania. They are not difficult to find, for every asylum will furnish such patients, who are to be found also dwelling in private families and leading a harmless though eccentric life. They may be divided into five or six classes, though no two patients are exactly alike, and endless subdivisions may be made. The mind here is not obliterated, neither is it in a state of general confusion of ideas and inability to reason and think. Given their premise, these people can argue keenly enough, but that their premise is false they cannot see. There is a twist or kink in the mind, an aberration, not an abolition. Bevan Lewis places these monomanias among states of mental enfeeblement. Maudsley calls them insane deformities of mind, and speaks of them as the counterpart of a fixed spasm or deformity of movement.

Many grow out of the constitutional peculiarity of the individual, and we are often told that his insanity is an exaggeration of his normal self. This will readily appear if we analyze some of the monomanias most commonly met with.

Monomania of Pride.

There are many in whom the subject-consciousness, of which I have spoken, rises to a considerable height even in the healthy and normal state, and the egotistic feelings predominate over the altruistic. This we see displayed in the character and bearing of the individual, in his relation towards his wife, his family, and friends, and his demeanor in the social circle in which he moves. This one is proud of his learning and intellectual attainments; another imagines

that he has achieved a position in society which is quite unique; a woman is vain of her personal appearance, and overdresses herself and paints her face and tires her head to attract admirers, and, as time goes on, she redoubles her efforts to tempt the tardy wooer. Some have ambition strongly developed and are ever seeking to rise above their present sphere. Insanity comes upon them, and if their physical condition is not one which dashes them down into the gloom of melancholia, then in all probability the egotistic feelings will be largely increased and all the former exaltation will be exaggerated.

In the acute stage of mania there may be great exaltation due to the morbid brain excitement, as we see exemplified in the grandiose ideas of the general paralytic, who before his illness may not have been specially egotistic. But when the acute stage has passed, instead of perfect recovery there is left this remnant of disease tinctured by the prevailing characteristic of the individual mind. Of this class are the delusions of those who think themselves great and titled personages. They may lead a quiet, uneventful, and routine existence in an asylum, taking the same walk and following the same occupations day after day, and yet all the time will assert that they are dukes, duchesses, or the like, and may not even complain of their detention. I knew an old lady who was for years under my care. She fancied herself the duchess of R——, and that I was the duke, her husband. She used to follow the movements of this nobleman as narrated in the newspapers, and ask me all about them the following day, contending that I had been here or there as the case might be. And then she would consult me about her health or ask for a pill as if we were patient and physician. She was in no degree demented, and remained in the same condition till she died. I knew her before her illness, and she was then an exalted and egotistic person and very vain.

Another form which this self-feeling may take and develop is religious fanaticism. As the melancholic man thinks himself the most wicked man in the world, one who has sinned against the Holy Ghost, and of all that have ever lived the worst, the egotism coming out even here, so the religious maniac thinks that he has a divine mission, that he is to convert the world, that he is the chosen of God or the Saviour of the world himself. There have been many fanatics of this sort who have found followers and have drawn crowds after them in all countries and ages. Such will be found in every asylum, rational in other respects and well behaved. If they learn what it is that detains them in the asylum, and conceal their delusion, or assert that they have given up the idea, it may be very hard to say whether they are still insane or not. A case of this kind came under my notice some few years ago. A young man of thirty was admitted in an

acute state of insanity, asserting that he was the Saviour and that all he did was by command of God. He persisted in this for upwards of six months, and then apparently recovered, renounced all his fancies, and stated that he now believed nothing of the kind. He was released and went abroad, and the same year published a book in which he showed that he had lost none of his delusions. It stated on the title-page that it was written by "the Christ." This patient, however, was more fortunate than the majority of monomaniacs, for after another year he recovered, and wrote begging that his silly book might be destroyed.

Another man who was under my observation for many years, and grew old in the private family in which he had long resided, was under the delusion that he was to be the Messiah at the second coming, and used to ransack the Bible for texts to support his belief. He had taken the highest classical honors at Oxford, and was a Hebrew scholar and a man of intellect and ability. He went where he liked unattended, and behaved himself with propriety, though latterly he became somewhat more eccentric. His delusion remained to the last, proof against all reasoning. Religious beliefs cannot be disproved by demonstration. Every one thinks that he is justified by the faith that is in him, and points to the beliefs of others which are equally incapable of exact proof. Probably this form of monomania when it becomes chronic is the most incurable of any, being an exaggeration and development of the constitutional idiosyncrasy of the patient. Religious ideas, however, crop up in the course of many acute forms of insanity, both mania and melancholia, and pass away again like other delusions, so that the popular notion that they mark a very incurable form of the disorder is erroneous.

Another monomania springing from the same source of egotism and conceit is the fancying that people are in love with the person thus exalted. This is something quite distinct from the erotomania so often seen in acute and puerperal mania, marked by indecent talk and gesture and improper advances to all of the other sex. The egotistic man or woman, puffed up by ideas of being personally most attractive, singles out some one and straightway imagines that the latter is in love with him or her. This is often not a secondary but a primary monomania, one which does not succeed but precedes other acute symptoms, and is not the residuum of an attack of mania. Women are more subject to this fancy than men, as might be expected. Old maids who are beginning to despair of ever being wed, and whose thoughts continually run on the subject, conceive a desire for some man or other who comes before them, in a vast number of instances the curate of the parish or the vicar, should he be unmarried. They

are certain that he is in love with them, and pester him with letters and presents, waylay him in his walks, and seek private conferences with him in the vestry. This may go on till it becomes a nuisance and complaint is made. It may not be a clergyman, but rather some friend or cousin with whom they are on terms of close acquaintance or even intimacy. Forthwith all that has passed in neighborly greetings and meetings is said to have a meaning. Letters written in cousinly phrase are hoarded and produced as being those of a lover, and if he is not careful a man may be easily entangled by such demonstrations. Conversely men may imagine that public characters, singers, or actresses are in love with them, and may follow and persecute them with presents and annoy in many ways if not put under restraint.

Monomania of Jealousy.

Somewhat akin to this, though growing out of another idiosyncrasy, is the monomania of jealousy. Some people are jealous throughout life; their intense egotism brings this about at an early age, and even as boys and girls they suffer torments of their own creation. The self-feeling does not allow them to mix freely with their fellows, but they have a tendency to live much in solitude and conceive a violent affection for one or other of their comrades, which affection may not be returned with equal ardor, and so endless quarrels arise if the beloved one forms a friendship with any other boy or girl. In some this jealousy with regard to members of the same sex continues through life, there being no feeling of the kind for the other sex, but in the majority of cases it is connected with sexual feelings, and instead of the loves of boys for boys and girls for girls we find insane jealousy of husbands and wives, and an equal jealousy also in the unmarried or widows who are keenly anxious to enter the matrimonial state. Envy and hatred as well as jealousy may be manifested here, and accusations of various kinds are launched against relatives and others who are supposed to come between the patient and the object of her choice. The most virulent and irrational display of this feeling is shown by wives towards their husbands, and in a number of instances some sexual trouble or perversion, or the change of life, is the origin thereof. It is sometimes carried to such an extent that a man's life is intolerable; he is accused of improper intercourse, or a desire for improper intercourse, with every woman he sees, young or old, rich or poor. If he enters a hotel or dines at a *table d'hôte*, he is told that he is looking at every woman in the room, and the scenes that follow are lamentable, to be terminated often in tears and reconciliation and reproduced the next day. Men, too,

have delusions concerning the wife's fidelity, but these are found in an early and acute state of insanity, and with recovery pass away. I have not known them to exist as a chronic monomania. Patients, while they have them, are dangerous and not unlikely to do injury to the wife.

Monomania of Hoarding.

Another monomania originating in the same selfishness and egotism of the insanely predisposed is that which we may term "hoarding." This is not uncommon among the chronic insane, and I have a case under observation at present in which it is the one or the most prominent symptom of an insanity which to an uninformed observer would be invisible. This young lady rendered her sojourn at home impossible by hoarding rubbish of all kinds in enormous quantities, refusing to allow the boxes to be unpacked in which she put it, and rendering the house intolerable for her relatives. She was not particular as to the ownership of the articles she concealed, and complaints arose as to missing things, for the disappearance of which the servants were called to account. When staying in a family she pursued the same system; hiding her money and saying it had been stolen, till a nurse was put with her who effectually controlled her doings.

I lately saw the room of a gentleman whose case might be called one of moral insanity. A more extraordinary sight I never beheld. It was filled with collections of rubbish, such as bags of orange-peel mixed with boxes of coins of some value, everything denoting the mania for hoarding. Another gentleman, also the subject of moral insanity, would pocket and hoard and arrange in his room quantities of small stones picked up on the gravel-walks of the garden. These had in his eyes some mysterious value. When they attained a bulk which became a nuisance they were confiscated by the housemaid, whereupon he made no complaint but straightway commenced the accumulation of a fresh series. This gentleman's insanity was the outcome of an inherited tendency greatly augmented by drink, and the craving for the latter is as strong as ever, so that, were he released, he would return to inebriate habits without the slightest delay. Many of these monomaniacal men owe their condition to drink or blows on the head, being already constitutionally predisposed. It is a combination of evil omen, and the prognosis in all such cases is exceedingly bad. The former as well as the latter gentleman was also the victim of drink; after apparent recovery he was released on probation, but soon relapsed.

Monomania of Persecution.

This, which is perhaps the commonest of all the forms of partial insanity, may come about as a primary disorder, or may be left as a secondary residuum of an attack of mania. There are many who by nature and constitution are very ready to develop the monomania of persecution. They are individuals who by reason of an egotistic self-consciousness are always in a state of suspicion of others, or think that their position and merits are not sufficiently appreciated, or that they are the object of slander or insult, or are being belittled in some way or other by persons known or unknown. Many go through life with this temperament, always fearful, always suspicious. One sees it constantly among the friends of our patients; if their relative does not at once improve and rapidly recover, they suspect that we are not trying to cure him and that we only wish to keep him for profit. They may not be insane, but the tendency to insanity is strongly marked. According to the environment, such people may be checked and controlled, or allowed to run on to a dangerous state of delusion. A sensible wife may allay a man's fears or suspicions, a foolish one may encourage and augment them. Men occupying prominent positions, as the rector or vicar of a parish, or the head of a firm or society, may be fearful of what is being said of them and willing to listen to all the gossip and scandal of a parish. Let such a one, with all this predisposition to morbid fear, get out of health, or encounter some disaster or shock, he will very likely manifest insanity, and his insanity will take this form.

We see every day how patients at the commencement of either mania or melancholia think that every one in the street is looking at them, and no less common is the delusion that their food is poisoned. These ideas are bred out of a feeling that there is something wrong, that there is a change, and that people in the streets notice it and attach some importance to it. And from strange internal sensations and discomfort arises the fancy about the food. But these may be but passing fancies, to be soon lost or merged into others more serious. The fixed delusions to which we give the name of monomania are of a more serious nature, though they may include the others within them. Out of hypochondriacal fancies may be generated a whole host of morbid ideas, such as that electric shocks are being given them by wires running under the floor or in the walls, and this is very likely to become more general when so many houses are nowadays being wired for electric light. So again mesmerism is called in to account for the various pains and aches

which the patient suffers, or thinks he suffers, for these people will describe their sufferings as the agonies of the damned, and yet eat, drink, sleep, and look the picture of health. Then there is spiritualism, another mysterious and unknown region, which plays a great part in the generation of these delusions, together with its congener hypnotism. All such persecutions the patients believe to be practised on them by people in or out of the house, by way of torture and punishment. They may think that it is done by those who are in authority in the house or asylum, and bitterly reproach them for their cruelty, or by those in subordinate situations without the knowledge or orders of their superiors, or by people wholly unconnected, who from outside by some mysterious or supernatural means work upon and torture their limbs and bodies. Persecution, too, may be of quite another kind. Instead of molesting the body the persecution may be directed against the position and character of the individual. Unknown and unseen enemies are traducing him, blackening his reputation, or trying to turn him out of his situation or society. Sometimes these persecutors may be identified and named, but more commonly they are unknown. Not unfrequently, however, the patient imagines the police are after him for some crime of which he is falsely accused, and I have known a man come joyfully into an asylum because he was assured that in it he would be safe from the police. Another who was long under my care was terribly afraid of the police. He was not melancholic, but, on the contrary, was the life of the asylum, but he would only go out of it by night or with some one to protect him, and if he came from it to my house he would take all the back streets and devious ways to avoid being seen. He got so well at last as to be apparently cured of his delusion and was persuaded to leave his place of shelter, but when he had done so he almost immediately went out of the country, and, so far as I know, never returned. I suspect he never really lost the delusion, and the lack of shelter probably intensified it.

More dangerous still are the patients who suffer from hallucinations. These are almost always hallucinations of hearing, which haunt them perpetually and cause the greatest torment—a torment often unbearable. Some authors, following Lasègue, consider this kind of hallucination as the only one essential to persecution-mania. It certainly is the most common, especially in a chronic form, hallucinations of sight belonging to a more acute state. Those of taste and smell occur, however, patients thinking that their food is contaminated by their enemies, or that foul odors are created to annoy them. The hallucinations of hearing are by far the most tormenting. Beginning by mere sounds or single words they advance

to sentences, and the "voices" uttered by the invisible persecutors accuse the sufferer of everything that is wicked and abominable, the charge of unnatural offences being perhaps the most common among men, and that of impure conduct among women. I have known various patients who were sane in all respects except for these voices, and their friends could hardly be persuaded that they were dangerous lunatics, dangerous to themselves and often dangerous to others.

It is very common for such persons to appeal to the police or a magistrate to have the "voices" and accusations stopped, needless to say without success. Then they wander about from place to place to avoid them, and in a new place they may for a few days find rest and peace. Then it begins again, and again they wander forth. Worn out at last by the persecution, disturbed at night by the voices and so lacking sleep, they at last lose control and shoot, it may be, some innocent passer-by in the street who has, they think, uttered some foul term of reproach. Many a murder has been committed in this way, and some, the motive for which has remained a mystery, may be explained by the hallucinations of hearing which have never been divulged. For some patients keep these a secret and refuse to talk of them, so that it is very difficult to elicit the fact that they are thus persecuted. Others, on the contrary, complain of them to every one and seek aid in order to bring about the cessation of their torments. But all in vain. Neither flight from the place of torment nor the assistance of the authorities or friends brings relief, and not unfrequently it happens that the sufferer, goaded to desperation, takes his own life and so makes an end of it.

Treatment does little for these people. The persecution continues in spite of all we can do, and neither argument nor demonstration can convince them that the mischief lies in their own heads and not in the next house. Sometimes there is a remission and for a time the voices cease, to return if health is out of order or any disturbing cause upsets the nervous system. The most that we can hope for is that the sufferer may in process of time become habituated to the sounds and words he hears, and learn to disregard them. This I have known to happen occasionally, but even in these cases that which may be disregarded at one time becomes at another an active torment which may impel the hearer to homicide or suicide.

It has been stated by some of the French physicians that in some of these cases there is a transformation, and that the delusions of persecution are replaced by an insanity of grandeur, or that the latter exists simultaneously and in juxtaposition with the former, and some writers go so far as to say that these ideas of grandeur appear at a certain stage of every case and indicate the ultimate organization

of the disorder. In this they are undoubtedly mistaken, for many patients live to old age without any manifestation of exaltation and deplore to the last the persecution they undergo. Inasmuch as the delusions indicate the emotional state of the individual, and the same man is at one time sunk in melancholia and at another elated and hilarious in mania, so the delusions of the persecuted may vary according to their physical and emotional state; delusions of grandeur may be noticed supervening or coexisting with the old notions and hallucinations, but denoting a change in the feelings which may or may not be permanent. So far from this transformation existing in every case, I have found it a rare occurrence in my experience.

Monomania of Doubt.

This variety of insanity is by no means uncommon, but the symptoms range over a wide field and may bear other names according to the particular case and the view of the observer. The doubts may relate to abstruse questions concerning existence, religion, or conduct, or may have reference to the most frivolous affairs of every-day life. Like all insane delusions they relate to the patient, and whether they be upon difficult or trivial subjects, they equally unfit him for attending to his every-day duties and business, render life a burden, and may drive him to desperation, though this is not nearly so common as in those who suffer from the delusion of persecution. In many respects the disorder is akin to melancholia. The doubt as to whether one has done right or will do right, and the fear of doing wrong are closely allied to the delusion that one has done wrong and is about to be punished for it. But there are many who are not melancholic, but have various ideas, tricks, and ways which are a constant plague both to them and their friends. They are constantly harping on the past and wanting to put something right which they fancy they have done wrong yesterday, last week, or last year. The thing may be of the most trivial kind, some word omitted or some detail to be altered in something that has taken place, yet it assumes an importance which is altogether morbid, even if the whole matter is not a delusion. They cannot write the simplest note or sign the smallest check without a subsequent misgiving that they have done it wrong and a desire to recall it and do it over again. Sometimes it is the name over a shop which they have read and have a doubt if they have read it correctly; they are accordingly miserable unless allowed to go back and read it again. Sometimes they have said some word, perhaps a long time ago, and are not sure if it was correct or proper to say; and as the victims of the persecution-mania imagine that their enemies are

causing injury to their bodies and health, so the doubters continually hesitate as to whether this or that will agree with them, or whether something they ate a week ago is going to make them ill; and this hesitation about food may become serious and lead to the necessity for feeding them by force.

Another form is the doubt as to the personal identity of the individual himself or of those about him. This is not a sensory hallucination; the patient will admit that the appearance is the same, but will have doubts as to whether it is the individual real and unchanged. Hallucinations are as rare in this variety as they are common in the mania of persecution, and I have scarcely ever met with them, those which apparently are mistakes of the senses being in reality false ideas or delusions. One very common doubt is that of uncleanness. The patient imagines that he has touched something that is dirty, or that an animal has touched him, or that in some way or other he is likely to contract infection, and a perfect mania for washing seizes him, and this may be carried to such an extent as seriously to interfere with health.

The prognosis in these cases of doubt is more favorable than in the mania of persecution, and if the delusions are not extreme and do not force the patient into an asylum, we may hope that they will in time weaken or pass away. The absence of hallucinations, especially those of hearing, materially favors the prognosis, these being the most organized of all. With regard to treatment, if an asylum is not necessary, constant change of scene and surroundings probably will do more than anything to allay the doubts. Those about a patient should without discussion ignore as much as possible the delusion and make him conform to the ordinary mode of life, regardless of his fears. Direct argument, or even direct ridicule, only tends to confirm and stereotype it. But, like delusions in general, it may wear out by being let alone. The health must be attended to; many are anæmic from worry, perhaps starved if their fancies relate to food, and the worry will render sleep defective. We may have hope of dispersing the delusion under favorable circumstances, but it often happens that when one doubt is set at rest, another springs up to take its place.

General Paralysis of the Insane.

This form of insanity has for every one engaged in the study of brain disease an interest which is possessed by no other. There is no other cause of death among the male insane which is so common or engages our attention so constantly; there is no other mental disease which from its commencement to its end is so closely watched

and carefully treated. And yet observers are still doubting and debating whether it is a definite and specific disease, or only a variety of cortical encephalitis. So greatly does it affect every portion of the encephalon that endless controversy has arisen as to its real seat and the tissue which is first affected. Yet no other variety affords such opportunities for post-mortem examination, as hundreds die every year under the care of skilled pathologists, and die in asylums where every facility for careful examination exists.* Another source of interest is the fatal nature of the malady. In spite of all the care and remedies which our asylums bestow on a large number of paralytics, and the experience gained by treating so many, we have not yet discovered a cure. Equally a subject of controversy is the cause of the disease, its connection, if any, with syphilis, and its relation to spinal disorder, symptoms of which are frequently found. On all these subjects physicians have written, and are constantly writing, till a large mass of literature has accumulated in various countries.

Who are the victims of this fatal malady? Unlike other forms of insanity it especially attacks men. Of the yearly average of general paralytics admitted into the asylums of England and Wales during the five years 1889–1893, 1,167 were males and 281 were females, and the proportion compared with the total average number of admissions was 14.5 of males and 3.3 of females. The females are almost all of the lower classes; it is the rarest thing to find a lady the subject of it. Dr. Clouston says he has seen one. I have never seen one, though I have met with it in one or two women who were married to gentlemen. It is doubtful whether it attacks more of the men of the upper classes or of the lower; but it is exceedingly common in both. And it attacks healthy, vigorous men in the prime of life, not the weakly neurotic valetudinarian. It is a common disorder among insane men of middle age between thirty and fifty-five. It is uncommon among the young or the old; at the age of sixty it is rare, at seventy it is unknown; it is rare but not unknown in children. In the *Journal of Mental Science*, XXXIX., 355, Dr. Wiglesworth records eight cases of general paralysis occurring at puberty, the age of the youngest at the commencement of the disease being twelve, that of the oldest sixteen. Five of the cases were girls and only three boys; there was hereditary tendency in four, probably in five, and in two others marked alcoholism in one or both parents. In the same journal (XLI., 482), Dr. Dunn gives the case of a girl, aged nine and three-quarter years, who died in the Berks County asylum of this disease.

* According to the Commissioners' report, 1895, there died of general paralysis in the county and county-borough asylums of England and Wales 1,206 patients of a total of 5,926 deaths, and post-mortem examinations were made in 947 cases.

The conclusion one arrives at from the description of these cases is that if all such are to be classed under the head of general paralysis, then the symptoms of the disease are infinite, and the opinion of those is right who say that we have not one special malady, but a number of allied maladies, to examine.

By far the largest number of the insane who suffer from general paralysis present well-marked and typical features. Putting aside for the present the ill-marked, anomalous, and pseudo-paralytic cases, let us consider what it is which we most commonly have to note. There are said to be three or four stages in the course of the disease. Like everything else, it has a beginning and an end, and there is of course an intermediate period of varying duration, but frequently a patient advances with gradual but certain progress from the beginning to the end without any marks whereby we can fix the dates of any stages of the illness. The first stage is called one of *alteration*, and it may vary much in duration, being extremely brief and lasting only a week or two, or noticeable for months or even years. Friends looking back will remember a certain alteration in the man, not much thought of perhaps at the time, but which accounts for odd things done by him and only looked upon as eccentricities or unusual. A lady told me that the first thing which showed that something was wrong was her husband, a grave and reverend clergyman, meeting her at the station, on her return from a visit, with a white hat on his head. These patients do things which they would never have done formerly; their highest moral nature is reduced, and the failure is shown in many ways. They are regardless of propriety, honor and honesty, will appropriate things which do not belong to them, will run after women, and do this in the most foolish way, never heeding the consequence, the person, or the place; and intellectual degeneration is manifested equally. In this there is a great contrast between general paralytics and those suffering from ordinary mania. The latter are often exceedingly acute, and will defend their acts, will reason and argue sharply, and explain away their misdeeds in a way which may baffle their cross-examiner. Not so the former, who cannot argue and generally deny that they have done that with which we tax them, and frequently their denial may be genuine, for they have forgotten it altogether. Their forgetfulness is very evident in this stage, and it is often difficult to say whether it is real amnesia or a want of attention which is constantly bringing a man into trouble. He forgets the time of day, the time of meals, is heedless of appointments, arranges to do something or go somewhere and then forgets it and wishes to do something else. In the same way his want of attention leads him to acts, such as exposure of his person,

of which he seems quite unconscious. He will also through the same defect go on drinking wine till he has too much, or buy articles beyond his means, buy the same thing over twice, or make presents to people who do not want them and would prefer not to have them. He is quite unfit for business, and what he undertakes he mismanages; in calculations or accounts he goes wrong, and a letter written at this time is markedly unlike his former correspondence. The loss of attention and memory is observable in many ways, and especially is he likely to forget what he has done a day or two previously. Not only will he be forgetful, but also apathetic, careless, and indifferent about that in which he formerly took great interest, and in all his new schemes and projects his attention soon flags. We see, in short, in his whole life a weakening of mind, moral and intellectual, such as may be noticed at the commencement of senile dementia, but which occurring in a fine and vigorous man of, it may be, thirty-five, too surely indicates the ruin even now commencing. The loss of attention was well marked in the case of a gentleman whom I was asked to see at a very early stage of the disorder. I was invited to breakfast at his house. He was not to know I was a physician nor was I to make any special physical examination. I breakfasted in the company of his wife and mother; he came in late, took no notice of me or the others, and ate his breakfast in a hurried and slovenly manner, saying very little and soon departing. He seemed quite unaware of my presence. I saw enough in his general deportment and heard enough from the others to diagnose general paralysis, and several years after I was sent for to the same house, found him moribund, and he died half an hour afterwards.

In this early stage the patient's mood is upon the whole dull and morose rather than excited and expansive. He may even be gloomy and melancholic, and I have known a gentleman be placed in an asylum for well-marked symptoms of melancholia which gradually passed away and were followed by the grandiose ideas of the second stage. This first stage will vary in duration according to the temperament of the individual and the necessity which may arise for interfering with his actions. If he is in a quiet country-house, is easily coaxed and controlled, and has nothing to irritate him, some time may elapse before what is described as the second stage supervenes. I have, indeed, known cases which drifted on gradually and quietly into the dementia of the third and final stage without any of the maniacal symptoms of the second, and never required throughout anything but the ordinary nursing of friends and attendants.

The physical condition at this time betokens the changes which are going on in the brain. There is often considerable vasomotor dis-

turbance, flushing or pallor of face, slow circulation, headache, and troubles of sight and hearing. And very early there may be one of those "congestive" attacks which are so common later and vary from violent pain and faintness to convulsion. We learn that there has been "a fit," and the friends are now seriously alarmed. A gentleman I saw lately who was mentally only in the first stage of alteration had two of these attacks a few days after my visit. They were very slight, but for some minutes he could not speak. They were called by his medical attendant *petit mal*. Even at this early stage, when no one could have signed a certificate of insanity, there were pin-point pupils and a total absence of reflexes. There may be even as early as this a certain tremor or twitching of the facial muscles and a fibrillary quivering of the tongue, and when the patient is quiet and not talking or being talked to, we may notice a dull and heavy look; he does not attend to what others are saying or join in the conversation unless appealed to, and though he is the subject of it and his health is discussed by his relatives, all he can say is that it is "perfect," and that he was never so well in his life, rejecting with a silly laugh all our advice and warnings. Even now there may be some alteration in gait. If he is tired he drags one leg a little, or he is fatigued after a moderate amount of exertion which would have been nothing to him formerly.

This first stage or period will last for a varying time till some congestive attack or excitement occurs, or something requiring opposition or interference rouses him to fury, and then we may have insanity of the most violent and extravagant kind, necessitating in the majority of cases removal to an asylum for the safety of the patient. There is one great peculiarity about the mania of these people. Almost all, certainly nineteen out of twenty, are full of ideas of their exalted station, their wealth or strength, and are perpetually boasting of it. They are self-satisfied in no ordinary degree, and think themselves the most wonderful people in the world. They screech or sing, and tell us they are the finest singers in Europe; they daub some color on paper, and say that they have drawn pictures which are to be hung in the Royal Academy exhibition, and sold for thousands. Nothing is too absurd; an ordinary maniac may have grand ideas and have his writing-paper engraved with a coronet, but once a duke he remains a duke, and reasons more or less from a ducal point of view. But in the paralytic there is no reason; he is a duke, a marquis, a king, and an emperor all in one, and is going to marry the Queen and all the princesses. The want of attention and the forgetfulness noticed already in the early stage are still more marked now; he cannot argue about anything he asserts, but only becomes con-

fused. The ordinary maniac holds to his delusion and justifies it, the paralytic has forgotten to-day what he said yesterday; yesterday he had millions, to-day millions of millions; his horses and carriages, houses and lands, grow in the same proportion. Although he may be angry with us for placing him in an asylum and keeping him there, he is nevertheless going to present us with a few hundred thousands, to build a palace and have us and all the attendants to live with him, or go round the world in the largest vessel ever built with the same people for company. The mental state in the time of the excitement is very emotional, and the sufferers change rapidly from violent anger to silly hilarity. The weakness of mind which is so manifest from the first enables them to be managed by good-tempered and clever attendants without much difficulty, for they can easily be put off and their wrath turned aside by holding out the hope that that which they desire will be granted "to-morrow." They have no reasoning power and no memory, so when "to-morrow" comes they forget they were told the same thing yesterday:

> "To-morrow, and to-morrow, and to-morrow,
> Creeps in this petty pace from day to day,
> To the last syllable of recorded time."

To bear out all these ideas of splendor and rank the paralytics, and especially the paralytic women, will decorate themselves with any tinsel, finery, or rubbish they can collect, and the ornaments of Christmas trees or crackers are carefully hoarded and displayed on their persons. Moreover they are often erotic and indecent, and both men and women will boast of the children they are to have and their number and beauty.

Though the great majority of general paralytics present this *délire ambitieux*, this expansive gaiety and grandiose ideas, we here and there meet with one whose delusions are melancholic, and these may prevail throughout with a curious mixture of boasting even with the gloomy ideas. Some few refuse their food, alleging that it is poisoned, or have hypochondriacal fancies that their inside is all wrong or all gone, and that on this account they ought not to take food. This state, in my experience, does not last long. I had much trouble lately with a gentleman whose physical symptoms were well marked but who was not exalted, and for a time thought his food had been tampered with. But just when it appeared that he would have to be placed in an asylum and fed by force, the delusion vanished and never reappeared. He rapidly passed into a state of childishness, and remained so for six and a half years, when he died of some slight lung trouble. Many, even of the melancholic paralytics, are very

fond of their food, and like the grandiose will eat it ravenously. The whole of the melancholia is tinged with the childish, self-satisfied feeling which characterizes the disease, and it is rare for them to attempt suicide and still rarer to succeed. In many we find hallucinations, especially of hearing, when they may be terribly worried by "voices." These all are patients in a more or less acute state, and such cases run a rapid course. Hundreds of patients, however, pass through the various stages, and decline and die without having had hallucinations of any of the senses.

Whenever we find these exalted ideas and notions of prosperity, wealth, or strength, even if they do not amount to palpable and gross delusions, our suspicions ought to be aroused. If the only assertion is that the patient was "never better in his life," that his condition is "perfect," there is cause for alarm if we hear from his friends that he is not himself, and that his altered state has given them anxiety. Close examination must be made and physical symptoms, if any, detected. Probably the earliest is defective articulation; if we watch the patient closely, in the midst of his boasting assertions, and if he is somewhat excited, as will certainly be the case if he is contradicted, there will be noticed a tripping or stutter in the enunciation of a word or the syllables of a word, which much resembles that of a man somewhat in liquor, who cannot say distinctly such words as "truly rural." The patient has to make an effort to get out a long word, and by shouting it may succeed; without such an effort he fails. Dr. Conolly said that "at the very commencement there is in these patients not a stammer, no letter or syllable is repeated, but a slight delay, a lingering, a quivering in the formation of the successive words or syllables, apparently from a want of prompt nervous influence in the lips and tongue." When the individual is speaking slowly and quietly, this may be difficult to detect, and it may vary much at different times, but it is a symptom of the paralysis which later is to invade the whole body, and has even now attacked the lips and tongue. At the same time tremor of the lips is constantly found, particularly of the upper, or, on the other hand, stiffness and immobility. The facial muscles too, those of the forehead, cheeks, and nostrils are also subject to twitchings and contractions. When the patient is asked to put out his tongue, we notice ataxic jerks and want of control in the movements, and a fibrillar tremor of the muscles will also be apparent. This paralysis, as the disease advances, may become so marked as to render the speech wholly unintelligible so that we hear nothing but a confused jargon.

If the articulation appears to be unimpaired and teaches us nothing, we may learn something from an examination of the pupils of

the eyes, and one thing which we expect to find is inequality. This may vary, being sometimes so slight as to be doubtful, sometimes very marked, and it may not be constant, appearing on certain days, and being absent on others. Occasionally there is irregularity in the contour of one or both pupils which may be oval or have lost the circular outline. Moreover, there is in some even at an early stage a state of contraction so that the pupils are extremely small, pinhole pupils as they are called. "In the early stage," says Bevan Lewis (*op. cit.*, p. 266), "we shall have these signs in a large proportion of paralytics, a moderate-sized pupil, slightly larger than its fellow, sluggishly reacting to light, even to a bright beam, and absence of the sympathetic dilatation which should occur on irritating the skin. In the most advanced stages the larger pupil will be found quite fixed to light or may contract very partially, and if a strong beam of light be used the initial slight contraction is followed by a sudden dilatation beyond its original limits, remaining wide throughout the illumination of the retina. Although there is this absence of light reflex in so many cases, yet the associated movements of contraction and dilatation of the pupil during the act of accommodation and efforts of convergence are affected only in the later stages of the disease, and in 11.3 per cent. only of the patients examined was it lost in both eyes; whilst as many as 63.6 per cent. showed perfectly normal response." On the whole I am inclined to place more reliance on the want of reaction in the early stage than on irregularity of pupil, inasmuch as the latter varies greatly on different days and is often very doubtful.

At this stage of the malady there may be little to notice in the gait or muscular power, and fault has been found with the term general paralysis, as not being applicable to persons who are active on their legs, strong in the arms, able to fight vigorously those about them, or climb over walls or through windows in order to escape. But though there is all this apparent strength, we may at the same time see that the deep reflexes are abnormal, for the earliest phenomenon is an exaggeration of the knee jerk. As time goes on and the disease advances, this exaggeration will give way to a sluggish state and by degrees to a total absence, but even then the patient may be able to walk fairly well. There may be a dragging of one leg, even when the reflex is exaggerated, this depending on one of the convulsive seizures which so often occur, or on spinal change, and varying much from time to time. Besides a dragging of the leg, the gait may be slow or unsteady, the legs being jerked and not moved steadily, and if the eyes are closed, the patient cannot walk or turn round, or even stand with the heels together. Sometimes

these tabetic symptoms occur very early, and I have known two cases in which they were observed even at a time when it was not possible to sign a certificate of insanity, though there was evident *alteration* in the mental state of the patients.

In many instances we find that by this time there has occurred something in the nature of a "fit," which may happen very early, before the mental symptoms are fully developed. If it is at all severe, the friends are greatly alarmed and ascribe all that follows to the attack. They will declare that there was nothing the matter before, and will not believe that it is only one symptom of the general disorder. The "congestion," on the other hand, may be very slight, and only indicates its occurrence by the loss of power which follows, generally on one side, or by a temporary aphasia. Seldom do we find genuine epilepsy or *grand mal.* Consciousness is not entirely lost, but convulsions occur, generally unilateral, or there may be simply a collapse and general paralysis which gradually passes off again, leaving the patient a little weaker than before. I have known an apparently very slight attack followed by deep coma from which the sufferer could not be roused. This passed off in a day or two as I foretold, the friends who thought death was near being much astonished at the prediction and fulfilment. I believe such a severe attack to be one of great congestion without any apoplectic hemorrhage, and that many of the so-called "fits" are congestions of a slighter character, for the head is hot and the temperature rises. The sequelæ are all that we notice, for we find a man in the morning unable to stand or to move an arm or hand, and yet this will all pass away in the course of a day or two. Few go through the stages of the malady without some attacks, slight or severe, of this nature. They often divide the illness into defined periods, the patient never quite regaining that which he lost through their occurrence. Those succumb soonest who have most, and frequently a succession of fits will terminate life at a comparatively early period. This is the case not unfrequently with elderly people or those who were weakly before the disease began.

There is considerable difference in the sexual power of general paralytics at this stage, as there also is in the reflexes. Some lose all sexual desire or power at an early period, but many show great sexual excitement and worry their wives, or run after strange women, and in confinement they indulge in constant masturbation, and their conversation is erotic with hallucinations or delusions of a sexual character.

Another symptom which is characteristic of the disease is the handwriting. Often we may detect the peculiarity in a letter otherwise tolerably coherent and rational. It is not a mere tremor in the

formation of the letters, for this may be noticed in the writing of those who are old, or paralyzed, or feeble from illness or other cause. There may be the tremor and the writing will be blotted and the paper dirty, but beyond all this we notice words left out, or letters or syllables, even when the writing itself is tolerably good, pointing to the want of attention which is so constant in the malady, and we may find it at a time when other symptoms are not very prominent. A few months ago a patient's brother sent me a letter, and asked me how I could say that the writer of so good a composition was out of his mind, yet I never saw a letter which more clearly indicated that the writer was suffering from general paralysis. It may improve, if under treatment the patient loses the excitement and passes into the stage of remission, and in fact it will vary from week to week, according to his condition.

A paralytic patient may often be easily managed for a time by coaxing or promises, but generally there comes some occasion on which when thwarted he breaks out into dangerous rage and excitement, and can only be restrained by force. It then becomes a question where he is to be treated and, as in all insanity, expense usually solves the question. Unless the friends can afford a house with garden sufficient for exercise and an adequate staff of attendants, to an asylum he must go, and for many an asylum is the best place as it is the safest. General paralytics carry their dementia into their violence, and are more dangerous in their attacks and more reckless of consequences than any other class except, perhaps, epileptics. They are easily pacified by judicious attendants, and in their weakly emotional state are angry and good humored by turns. We have here a maniacal condition which may last for weeks or months; the patient is noisy, destructive, tearing clothes and bedding, or breaking windows, trying to escape in silly and dangerous ways, attacking attendants in a manner regardless of consequences, and yet with all this fury and violence it is not like an ordinary case of acute delirium or acute mania. Paralytics may sleep but little, but sleep is not altogether absent, and they do not die for want of it or from the exhaustion of the maniacal paroxysm. They generally take food well, often voraciously, it being quite the exception for them to refuse it. If they conceive a delusion about its being poisoned, it does not last long and is soon forgotten in the absence of memory which is characteristic of the disease, and is one reason why the delusions are so constantly changing. Such patients in this acute condition preëminently require a padded room, that they may not constantly come into collision with the attendants, for their ribs are more brittle than those of other people and liable to be broken in a furious struggle.

The maniacal condition will gradually subside, for patients rarely die in it, and then will follow one of two conditions. Either there is gradual improvement, to such an extent it may be that the relatives rejoice and declare that recovery is complete, or the stage of dementia commences and gradually progresses to the final extinction of mind and life. The remissions, for we cannot call them recoveries, vary very much in degree and duration. In some there is a wonderful disappearance both of bodily and mental symptoms, the improvement lasting for some time. These are called recoveries, and are quoted as instances of the cure of general paralysis. Patients may lose the delusions or be able to conceal them, may be able to travel, write a good letter, live quietly and orderly in their families, and pass as sane men in society. But all those that I have known, apparently well and recovered, have long since died, and no one that I have ever seen has really recovered and been himself again. They remain in this satisfactory state by dint of perfect rest and quiet, but if they return to their business or profession, and try to force the brain to do its ordinary work it fails, and a break-down ensues with a recurrence of the excitement or a hastening of the dementia. Where it is necessary to appoint legal guardians of a patient's property, it is advisable to do it as early as possible after the first outbreak of excitement and delusions, inasmuch as it may be more difficult if the period of remission and apparent recovery has set in. On the other hand, if such appointment has been made and the management of his affairs taken out of the patient's hands, such proceedings should not be lightly superseded because he is better and his friends think him recovered. In some cases there are physical signs of the disorder left, even when there is great mental improvement. There will be noticed some difficulty of articulation, some weakness of walk, or shaky handwriting, irregular or unequal pupils, or a general feebleness. All this points to the continuation of the disorder even when the mind is apparently clear, and is a warning that a return to former life and occupation is not to be looked for.

If no remission occurs and no apparent recovery, the sufferer will remain for a longer or shorter time in what has been called the second or stage of alienation, and then gradually pass into ever-increasing dementia. The excitement will be less, but the exaltation remains. Though shut up in an asylum, and living among and taking his meals with a number of others whom he recognizes to be insane, he is none the less a king, a duke, or a millionaire. He writes to the shops which advertise in the newspapers, and orders everything he reads about, and though his orders are never executed, he writes them day after day and week after week. He thinks the asylum a palace

and his own property, and takes little notice of his own relations, so wrapped up is he in the present and the future, and so oblivious of the past. In some cases hallucinations of hearing torment him, rarely those of sight. There may also be disordered sensations of the viscera or disordered muscular sense. The mental condition of all these paralytic people is one of supreme happiness, and this is the only redeeming feature of it. They retain to the last their grandiose ideas, and vaunt their wealth and strength when they are not able to stand alone or lift the food to their mouths.

The bodily health gradually declines like the mental, but will vary from time to time; one day it will appear as if the end was near, and a few days after the paralytic will be walking about as if he had a new lease of life, the explanation being that a fit of congestion had brought him low from which he has again rallied. Frequently after the excitement has abated, the patient puts on flesh and becomes very stout, and friends say how well he is looking, but this subsides, and in its place we may find emaciation in spite of the administration of a large quantity of food. This is very likely to be the case in cold weather, for so low is the nerve power of these people that they are extremely susceptible of cold, and it is most difficult to keep them warm even in well-heated rooms. The paralysis which affects the muscles of speech also impairs those of deglutition, and the act of swallowing is attended with much difficulty. The patient may, if left alone, go on cramming food into his mouth without swallowing till it is full, and the consequence is that he either gets it impacted in the œsophagus so as to compress the larynx, or else gets it into the larynx and trachea. From one or other of these accidents choking is a not infrequent mode of death in this disease, and the greatest care ought to be taken that a patient shall not eat alone or without an attendant at his side, for instant suffocation may be caused by a mass of food becoming impacted. It is better to feed all such with a spoon rather than let them feed themselves.

The last stage of these patients is one of mere existence—paralysis which may truly be called general, and the most complete extinction of mind. They are wet and dirty, and extreme care is required to keep them from bedsores; in many cases no care is sufficient to avert this undesirable event if the vital power is greatly reduced. Yet with the rally which sometimes takes place, I have known the sore places on the back and the heel of a patient get quite well and remain so for some time, till a fresh reduction again laid him low. A symptom frequently noticed at this latter period is loud grinding of the teeth. For hours together a man will sit and grind his teeth, making a most horrible and discordant noise. The duration of the final stage varies

much. A gentleman was brought to an asylum in a somewhat advanced state in January, 1891, and after some epileptiform attacks became in a few weeks completely paralyzed and speechless, not recognizing even his wife, not moving hand or foot. He looked as if he could not last more than a few days, but he remained in precisely the same motionless and speechless condition for three years, neither better nor worse, unable to raise his hand to his face, but without bedsores or other complication. In January, 1894, a bronchial affection carried him off.

We are often asked, and it is important for friends to know, what is the probable duration of the disease which we pronounce to be fatal. Writers vary much in the estimates they give according as their experience is derived from the inmates of crowded pauper asylums or from paralytics who have the best food and nursing which money can command. "The duration," says Dr. Mickle, "varies from a few weeks or months to one, two, three, or more years; a few cases last more than five, ten, or fifteen years, and cases of even longer duration have been reported, but if genuine are, at least, exceptions which prove the rule. The duration is often long in the 'ascending' form where the spinal cord is first affected." The longest case within my recollection was that of a gentleman on whom a commission of lunacy was held in the year 1858. He was undoubtedly suffering from general paralytic symptoms at that time, and had shown signs of brain affection and epileptiform attacks as far back as 1856, having been married in 1855. This gentleman lived in an imbecile state till 1883. Dr. Clouston gives the case of a patient who had the symptoms of the disease on his admission in 1860 and was alive in 1882. In my experience the average duration of those who can command careful nursing and every appliance and means for taking care of them is about five or six years, but many are cut off by fits at an earlier stage.

Diagnosis.

It is of the utmost consequence that we should make an accurate diagnosis when a patient is brought before us who may be a general paralytic. In a large number of cases this is attended with no difficulty. A fine, healthy-looking man of thirty-five or forty is presented to us exalted and hilarious, and even as he walks across the room we notice that the pupil of one eye is larger than that of the other. It is a typical case and five minutes are enough for a confident opinion. But as there is nothing easier than the diagnosis in hundreds, so is there nothing more difficult in a certain minority. To arrive at an undoubted decision at one interview or inspection is

very often impossible, and yet it is this which we may be called upon to do. Patients are constantly sent to asylums as general paralytics by medical men who certify them as insane on account of their extravagant delusions, but who only see them once and have not the means of examining them carefully. There can be no doubt that mere mental symptoms and delusions, even of the most exalted kind, are not sufficient of themselves to render the diagnosis beyond question, if we can discover no somatic conditions. But even about the latter there may be great difference of opinion. About unequal pupils we may be tolerably confident, but even here I have known friends declare that this has been the case for years, and it sometimes may be seen in the sane if the accommodation has been overtaxed. Tremors of the tongue and the jerk with which it is protruded are open to controversy. If we examine non-paralytic patients, and they are nervous under our scrutiny, they may jerk their tongues out and in, especially if they are ladies who do not care to show them. The tremor may be due to nervousness, as also the tremulous condition of the facial muscles; in the early stage the knee-jerk is not generally absent but exaggerated, but whether it is exaggerated or not in a particular patient may be open to question. It is the conjunction of a number of conditions which strengthens our opinion, but the question is often one of the greatest difficulty, and it is as well to say after one interview that our verdict is provisional, and can only be confirmed or disproved by the progress of the malady.

Some years ago a gentleman was brought to me and both the certifying medical men, one of whom was an expert, pronounced the case to be one of general paralysis. He had been violent, associating with prostitutes, and exposing his person. He was very foul and abusive in language but had no exalted ideas, and I could not discover any physical signs of paralysis. He rapidly improved and in a month was fit to be removed, but lived for some time afterwards as a precaution with a medical man. The rapid improvement and absence of the usual symptoms made me think that it was not a case of general paralysis but of alcoholic disorder. This opinion was altogether scouted by his friends. About six months later he came to me perfectly well and asked me to give him a certificate that he was well enough to return to his business, which I did willingly. Some four or five months afterwards a friend said, "You will be sorry to hear that poor X is in ——— Asylum in the last stage of general paralysis." I *was* sorry and not a little surprised. Eight or nine months afterwards the patient again walked into my room to show me for the second time that he was quite well. It then came out that alcohol was the cause of both the attacks, but that so severe was the second that a

general paralysis both of mind and body was the result, a paralysis so complete as to deceive some of our leading experts. Fortunately for the patient the symptoms passed away and gave him such a lesson that, so far as I know, he has never broken down again. The drinking throughout had been secret and the practice was not within the knowledge even of his nearest relations. The rapid improvement in the first instance and disappearance of all mental disorder in a month made me confident that it was not a case of general paralysis, but I was greatly confounded by the news I received the following year.

Another man was brought to the same asylum who, it was said, had exhibited signs of general paralysis for the past six months. He had been squandering money, neglecting his wife and children, associating with prostitutes, and ordering numerous things from tradesmen. At last he was arrested on a charge of obtaining goods under false pretences. This on admission he treated as a joke and said that he had won £20,000 on the Derby and £100,000 on the Oaks. He hired a carriage to go to the Derby and drove about London in it all day, never going to Epsom at all. He was found lunatic by inquisition upon the supposition that he was a paralytic, and went on for many weeks in the same way, inviting persons of distinction to dine with him, ordering four yachts at once and the like. In three or four weeks he became worse and quite incoherent, and it is recorded that there were tremulous movements of the muscles of the face. This was the only physical symptom noted, and it is one on which it is impossible to rely if it exists alone, for at a time of great excitement there may be this tremulous condition even in the sane, and the same may be noticed in those that are weak from previous illness. This patient was removed to the country and eventually recovered completely and remained well.

Our diagnosis may be considerably assisted by the previous history of the patient. I once saw a man who had the most extravagant ideas, who was going to make a tunnel through the earth, was going into Parliament, and had various projects by which he was to make an immense fortune. There were no physical symptoms, however, and nothing wrong with the eyes, and the history was that he had had a similar attack in India some years before from which he had recovered. Not unfrequently have I seen patients in an exuberant state of exaltation, spending money and behaving in a wild manner, and on careful investigation it has appeared that they were in the expansive and exalted stage of what the French call *folie circulaire*, that having gone through the stage of depression they had now entered that of excitement, and one could assert with confidence that this would again be followed by depression, that the exaltation was

not that of general paralysis, but that the alternation of the two phases would go on throughout life.

The previous history then is very important to determine the diagnosis of the disease. If we hear of a former attack, or more than one attack, from which recovery has taken place, the inference is that we have not to deal with general paralysis. The question, however, arises, Does general paralysis occur in the course of ordinary insanity? or if a patient recovers from an attack of mania or melancholia and breaks down again on a future occasion, is the second likely to be an invasion of general paralysis? Herein is involved the nature and pathology of the malady which must presently be carefully considered. Those who, like Dr. Clouston, consider it "a true cerebral disease as distinct from any other disease as small-pox is from scarlatina" will deny that ordinary insanity can be transformed into it, and think it unlikely that an attack of the former can be followed on a subsequent occasion by the symptoms of general paralysis. I knew one man, a member of the medical profession, who became melancholic and was placed in an asylum. His melancholia was of the ordinary kind, he recovered and went home, and some time after was brought to me with well-marked symptoms of general paralysis, said he was the King of France, the possessor of millions, and so on. He dragged one leg, and as this excited condition had only lasted ten days, I presume that he had had an epileptiform seizure. There was no further remission and he remained a paralytic till his death. The question here was whether the melancholia was but an instance of the depression which occasionally ushers in general paralysis, and the apparently sane interval only a portion of the prodromal or commencing stage, or whether the two illnesses were distinct, the general paralysis having nothing to do with the former melancholia.

The cases which are the most difficult to diagnose are those of subacute or acute mania with exalted delusions and ideas of wealth or grandeur. It is here that we have to examine closely for somatic symptoms, but at an early period it may not be possible to discover sluggishness or inequality of pupils or difficult articulation, and there may be a doubt as to an exaggerated knee-jerk, so that it will be impossible to pronounce an opinion without hesitation that the case is or is not paralytic, and subsequent examination alone can decide. Loss of memory, if found, will be of significance, but it may not be easy to test it if the patient is very maniacal and will not give himself the trouble to recall the past. Such a person being evidently insane must be kept under observation, and time will develop other symptoms if the disorder is paralysis.

Probably the cases after these which present the greatest difficulty are those of alcoholism, especially if it is sufficiently advanced to produce paralysis. The history of the patient narrated above well illustrates this; in his first attack the mental symptoms gave rise to the suspicion; in the second both body and mind were so prostrated that he appeared to be in an advanced stage of the disease. We may even find in some alcoholic cases a certain degree of the optimism which characterizes general paralysis. Dr. Batty Tuke[50] mentions several patients in whom he observed impairment of speech, walk, and memory with marked exaltation. Yet two recovered, three remained in a stationary condition, and one died of Bright's disease without developing further symptoms. There was one symptom absent in these cases—the pupils were not affected and Dr. Tuke says: "The indication which weighs most heavily with me is the condition of the pupil and retina. If, after careful weighing of the history and symptoms of a suspected incipient case, we find contracted or irregular pupils, and on ophthalmoscopic examination hyperæmia of the retina, the weight of evidence leans towards general paralysis."

In my own experience I have not found the exalted delusions which characterize general paralysis in patients suffering from alcoholism. There were none in the case which I have given. There has also been less of the convulsive stutter and tremulousness of the lips and facial muscles, and more of the tremor of hands. The delusions have been due chiefly to the great impairment of memory from drink. Yet recovery has taken place in many cases even after long periods of time. It is probable that the instances of recovery from general paralysis of which one hears occasionally may in truth be recoveries from this or some other form of insanity which simulates the usual symptoms of the graver malady. There are certain cases which Sir J. Crichton Browne has described as chronic "brain-wasting,"[51] many of which might be termed pseudo-general paralysis. The symptoms, he tells us, are headache of a dull heavy character, with pallor of countenance, cramp, or other anomalous sensations, or a sense of numbness or weight. Later a convulsive attack occurs affecting one or both sides, or, more commonly, paralysis is insidiously developed without convulsions. Muscular power is much diminished in one side or limb or in all the limbs; articulation is affected and the pupils are unequal. The temperature is rather depressed, and does not rise in the evening like that of the general paralytic, the mental symptoms are confusion and failure of attention with sluggishness and loss of memory. The emotional state is one of depression rather than exaltation, herein also differing from that of the paralytic. It resembles the last state of the latter, but there

have been none of the early symptoms. Recovery sometimes though rarely occurs.

The connection between syphilis and general paralysis is one on which something must be said hereafter. Syphilitic brain disease may be the cause of general paralysis or may simulate general paralysis, and it is difficult to say how we are to distinguish the one from the other. Dr. Duckworth Williams records a case of recovery from general paralysis in which the symptoms were well marked: thickness of speech, tremulous tongue and lips, uncertain gait, and *delire ambitieux*. This man got well under the administration of perchloride of mercury. Dr. Savage mentions one who had a history of syphilis; he was suspicious, thought people were going to murder him, tried to choke his wife, and cut his own throat. He had marked ptosis, external strabismus, and dilatation of right pupil, was dull and obstinate, wet and dirty. He was treated by perchloride of mercury and recovered. But these were not the symptoms of general paralysis. Where the patient presented the marked symptoms of the disorder, I have never known antisyphilitic treatment effect a cure, even if it was tolerably certain that the paralysis was due to syphilis.

Etiology.

The controversy as to the exact nature and pathology of general paralysis is by no means concluded. Before entering upon the question it may be well to consider the causes as they have been laid down by the various authorities and see whether from them any light can be thrown upon the peculiar character of this fatal disease. Dr. Mickle divides the causes into predisposing and exciting. Under the former head he speaks first of *heredity*, which he says is probably a factor in about one-third, more often in females than in males, the percentage of alleged heredity being less in private than in pauper cases. In my own experience I have not found it in as many as one-third, but it is difficult in private cases to get at the truth as to heredity. Of *occupations* those which entail worry, overwork, or emotional overstrain predispose, also naval or military life, prostitution, those which expose the workers to great heat and sweating, or the alternation of heat and cold, or alcoholic indulgence. There may also be predisposing *mental causes*, such as an anxious, straining life, moral shocks, or the struggle of existence in crowded cities. *Cranial injury* also may be a predisposing cause.

We have here, as may be readily seen, most of the predisposing causes of ordinary insanity. Is there anything among the *exciting causes* which is calculated to produce fatal brain disease? According

to some a common and even the most common cause is sexual excess, that is, excessive coition. That it exists as a cause, or as one of the causes, in a number of general paralytics is certain. In Dr. Mickle's opinion "it acts in alliance with other factors and forms a part of that general sensuality and fastness which so often incur this disease, or else is allied with a sanguine temperament and an overactive, protracted, and exhausting output of physical and mental energy. Cerebrospinal strain in a wide sense, and mental strain or overstrain are the great pathological factors of general paralysis."[52] Dr. Savage also says of this cause: "There are patients admitted yearly into Bethlem whose disease I believe to be chiefly produced by sexual excess; but such men are generally not only living lives of general excitement but are wedded to women of a specially amatory nature," and he also remarks that this excess is a common early symptom of the disease, and may be a symptom rather than the cause.[53]

It has been suggested that the disease may be due to a toxic cause, to such poisons as alcohol, syphilis, lead, or gout. The first two probably cause general paralysis not unfrequently, though it must be remembered that there may be alcoholic insanity and syphilitic insanity without general paralysis. Insanity from lead is not uncommon but the symptoms are rarely those of general paralysis, and gout cannot be a common cause or the disease would not be found in men between the ages of thirty-five and fifty rather than at a more advanced time of life. Dr. Mickle is inclined to attribute a toxic origin to general paralysis.[54] He does not say, however, whether he means toxic agencies from without, as those just mentioned, or toxins, as ptomains, generated within the body.

The exciting causes may be *mental and moral* as well as physical. Any severe strain whether of intellectual work or worry may light up the disease. It occurs at a time of life when work or worry has gone on for some years, not in the adolescent period when though work may be hard, worry is less, but in the age of full manhood when both may have long existed, and when the conditions of life entail dwelling in a crowded city with defective sanitation and very possibly alcoholic indulgence as the result of such a life.

Cranial injury is, I am certain, a cause of the disease in not a few cases, and it is one which may exist alone without any other factors. One man I knew whose symptoms followed a severe fall while hunting, there being no other cause discoverable. Dr. Fox[55] gives the case of a man who had lived a most careful life, in whom there was no possible trace of syphilis, who had a healthy family, had done his work easily, had had no worries or pecuniary anxiety. One day he was thrown from his carriage and from that time was a changed man.

Very shortly symptoms supervened which were as typical of general paralysis as anything could possibly be.

We ought to gain some information as to the causation of general paralysis from considering those who do not suffer from it as well as those who do. It is especially rare in Ireland, though alcohol is taken largely, though syphilis and venereal excesses must exist in the large towns, and exciting mental causes, as poverty and worry, must be as common as elsewhere. Yet Dr. Robert Stewart, for forty years superintendent of the Belfast Asylum, never saw a case of the disease, and his successor, Dr. Merrick, wrote in 1881 that he had had no case. In this asylum the inmates average four hundred and forty, drawn from an agricultural population and the large manufacturing towns of Belfast and Lisburn. In all the Irish asylums the cases are extremely rare, and not more frequent in those parts of the country which are the most Saxon than in the Celtic districts. Its frequent occurrence in Wales shows that the Celts have no special immunity, and though it is rare among the Scotch Highlanders, they do not escape if they take up their residence in the large towns. I have found it existing among the negro patients in the asylums of the West Indies, but the type here was not that marked by exaltation but rather by dementia; epileptiform attacks were not uncommon and often the cause of death. Dr. Plaxton, who at the time of my visit was the superintendent of the asylum at Kingston, Jamaica, was in 1880 the superintendent of the Ceylon Asylum. Thence he reported [58] that on his arrival almost the first thing that struck him was the entire absence of general paralysis. Since then he had had three cases in males which he considered to be examples of this disease. The first was in a condition of dull dementia with motor symptoms. Of him there was no history. The second was a hard drinker; he was when admitted in a state of delirious excitement which continued to the end. The third had had great losses in trading. He was excited, noisy and restless, had well-marked grandiose delusions, but the predominant emotion was towards depression. He died after epileptiform seizures. He had been a great smoker of bhang, and had marks of old buboes in the groins and some ulceration of the palate and tonsils. Asiatics appear to be free from the disease if they do not succumb to the vices and diseases of more "civilized" nations.

Who are and who are not the victims in England? It is very rare among the women of the upper classes. It is much rarer among those of the lower than among the men of the same classes. The lower-class men are more liable than those of the upper. Can we deduce anything as to the causation or pathology from these statistics?

A careful examination of patients teaches that there is the closest

resemblance between the paralytic and non-paralytic, at any rate in mental symptoms. We find in the former such delusions as these: "Believes himself given over to the devil," "thinks poison is put in his food," "believes he has committed sins too enormous to be forgiven", "thinks he is going to be arrested." On the other hand we meet with very exalted ideas, delusions of wealth and grandeur, and the assumption of titles and honors in patients who are not paralytic, in women as well as men.

What is there in the condition of the women of the upper classes which should exempt them from a disease which appears in those of the lower classes? It may be urged that among the latter the effects of alcohol and syphilis are potent. But alcoholism is not so very uncommon among ladies, and most medical men have seen its results in the shape of paralysis and dementia but not general paralysis of the insane. Syphilis is certainly common among women of the lower class; so common indeed is it that if it were a frequent cause of general paralysis, the number of female general paralytics ought to be far larger than it is. Those who have the treatment of syphilitic women do not speak of the disorder as being a frequent result of the syphilis, and it is manifest that the latter can only be one factor in the causation of it.

There is one point in which the mental symptoms of the general paralytic differ from those of the ordinary maniac, however exalted the latter may be. We notice the commencement of the dementia which is in the end to obliterate all the mental faculties. This is visible in the paralytic from the very beginning and is not seen in the maniac; and almost as early the physical symptom of unequal pupils or a slight stutter may be manifest. Why the prognosis is so uniformly unfavorable in all these cases is because this commencing dementia and the physical defect of speech or pupils mark not merely a functional but an organic change which is taking place in the highest centres of the brain, a change which is progressive, and though it may advance slowly with pauses and remissions, yet nevertheless is not to be arrested by means known to us, and terminates not only mind but life within a few years.

As to the nature and seat of the primary disorder opinions still differ, and the difficulty of determining the one or the other is shown by the voluminous writings on the subject. The examination of the morbid anatomy is not conclusive for the reason that it reveals to us the results of long-standing and progressive degeneration—degeneration which causes the lesions to resemble those of other diseases, and has even induced observers to imagine that senile dementia and general paralysis are one and the same malady.

The first symptoms, mental and physical, point to a disease which has attacked the highest structures of the cortex, the nerve cells and fibres. And from the first it would appear that this is an attack affecting the life of the part and not a mere functional disturbance. That it is of the nature of an inflammation seems to be proved by the rise in temperature, the evident hyperæmia and hyperaction in the early stage, and the appearances after death, so the name claimed for it by many is a *cortical encephalitis*. Why this should attack the brains of some and not of others, the brains of men in the prime and vigor of life, while it passes over those of the young and old and the majority of women, it is at present difficult to say. Not more difficult, however, than the question why one person develops cancer in a family whose history shows no trace of hereditary taint, while in another there may be a tumor of the most innocent kind. All that we can say is that given the sex and age in which it is most frequently seen, a brain predisposed by syphilis or alcohol, by overwork or overworry, instead of being functionally upset for a time, contracts this which may well be termed the malignant disease of the insane and at once loses the life of some portion, perhaps a small one, of its enormous congeries of cells and fibres, and undergoes a change which renders it incapable of ever again being perfectly restored, though it may be repaired to a considerable extent.

I am supported in the view that the nerve cells and fibres are the first attacked in general paralysis by Dr. Mickle, who in a recent article[57] writes: "Some time before I first knew of Tuczek's results I held the view that in some cases at least of general paralysis the nerve-cell-and-fibre apparatus of the brain probably suffers earliest, and I maintained this view in a paper read at the annual meeting of the British Medical Association in 1883, and reproduced some of the conclusions drawn therein in my work on 'General Paralysis,' from which the following extracts are taken." "If we inquire where the starting-point of the change is in general paralysis, our histological investigations would, on the whole, refer us to the vessels and interstitial tissue, or at least intercellular elements. Nevertheless it may well be that the starting-point of the trouble is often in the ganglionic nerve cells, and that the excessive overstrain and morbid stimulation or irritation by which the nerve-cells are brought into a state of damage, injury, and lowered vitality superinduces an active afflux of blood. An equal degree of departure from a healthy condition existing in nerve cell, in vessel, and in intercellular substance, the last two would give vastly more obvious histological indications of it than the first would.

"On the whole, we may view general paralysis as essentially com-

mencing with hyperæmia and ending with chronic cortical degenerative cerebritis and, usually, embryonic and connective-tissue substitution, the change, fundamentally parenchymatous, affecting all the elements of the part; but usually, under the methods of examination hitherto chiefly in use, presenting a more obvious and more marked affection of the blood-vessel walls and interstitial elements. The cerebral, or even encephalic, are almost invariably associated with lesions of other parts of the cerebrospinal nervous system, and the morbid action begins exceptionally in parts other than the cortex cerebri. Obviously this view allows of several varieties of general paralysis."

Upon the number of varieties into which we may divide the cases of general paralysis much difference of opinion exists. The course of the disease varies much. In some there is from the first and throughout great excitement and exaltation which soon wear out the patient and bring about rapid death. In others there is quiet dementia with scarcely any excitement or grandeur, and these last a longer time. Others are throughout depressed and melancholic. It is doubtful, however, whether these cases, though they differ much, can be grouped into special varieties, for they all have many characteristics in common. There are some which require notice, in which spinal symptoms exist before the cerebral. I have known several who apparently suffered from ordinary locomotor ataxia for a year or two with their faculties unharmed, and then the usual symptoms of general paralysis supervened and ran the ordinary course. What is the connection between the ataxic and the cerebral disorder? Some think that there is an extension of the spinal lesion to the cerebrum, due to "an ascending change—*i.e.*, to propagation by direct continuity of diseased tissue—thus making a system disease of the spinal cord the originating factor of the subsequent cortical lesions of general paralysis." [58] From this view Bevan Lewis dissents, as he has failed to find direct continuity of changes in the spinal cord and brain, and is of opinion that we are "apt to overlook the transfer of disease to distant parts of the nervous system through implication of higher realms, not by direct continuity of diseased tissue, but through the vasomotor agency operative upon nervous tracts in physiological sympathy with their higher centres." "In the large majority of cases of general paralysis the patient passes through the various stages of the disease without any notable spinal symptoms apart from those due to implication of the bulbar nerve nuclei, until the last epoch of the affection is reached; while in others, from the very outset the spinal symptoms are the most prominent feature of the case. In other cases, again, the spinal symptoms appear to bear a definite relation to the various

stages of cerebral disturbance and vary in their nature *pari passu* with the latter."

Bevan Lewis[99] groups the cases commonly met with into four divisions.

"1. In the majority of cases we have as the only evidence of spinal implication a somewhat general diminution of cutaneous sensibility associated with a sluggish or greatly diminished knee-jerk; alternatting later on with (or supplanted by) increased knee-jerk, usually as the direct sequel of a convulsive or apoplectiform seizure. Later on in the disease paretic symptoms may predominate and contractions be established; but these follow in the wake of pronounced cerebral disturbances (convulsions, etc.) and appear in fact to be initiated thereby, while the cerebral implication throughout has been all along the more emphasized.

"2. Here there is a second group comprising from the very onset notable tabetic symptoms, the cerebral often so greatly in abeyance as to arouse the doubt whether we are not here engaged with a genuine *tabes dorsalis* of local spinal origin. The disturbance of sensation, the abolition of the deep reflexes, the ataxic gait, are all so prominent that we are apt to attribute such symptoms to a primary implication of the cord itself. And yet in this tabetic form of general paralysis we usually witness complete subsidence of the special spinal symptoms, the tabetic gait passes off, the knee-jerk returns, and then the full development of the cerebral symptoms is established; or what is not infrequent, the sensory implication of the cord becomes a motory affection and spastic paraplegia replaces the anæsthesia and ataxia.

"3. In yet another series of cases, the motor spinal anomalies are from the first a most notable feature; and symptoms indicating a symmetrical descending sclerosis of the lateral columns are early apparent, usually as the sequel of convulsive seizures, a mode of implication which appears to be of special frequency in general paralysis affecting those who have been addicted to alcoholic indulgence.

"4. Lastly, there are those cases where no spinal symptoms whatever are noticed, the derangements being cerebral throughout."

Morbid Anatomy.

Almost every part of the brain structure has been looked upon as the seat of the disease. Some have thought it a chronic meningitis, many more have looked upon it as an inflammation of the cortex, while by others the morbid change is thought to be an increase of the connective tissue, invading both the grey and white cerebral substance. Then again it has been thought to depend upon disease of

the blood-vessels, and Bevan Lewis is of opinion tha the earliest lesions are witnessed in the vessels of the pia mater. The difficulty arises from the fact that the vast majority of general paralytics do not die at the commencement of the disorder, and those who are competent to examine the morbid anatomy and are familiar with the disease do not see the patients till they are admitted into asylums, probably when some time has elapsed since the first symptoms were noticed. With rare exceptions life is prolonged for some months or even years, so that all that is seen is the result of long-standing degenerative disease.

When we open the head of a general paralytic we find the cranium often much thickened and the dura mater adherent. This too is thickened, as are the walls and sheaths of its vessels, and on its inner surface are frequently seen layers of thin, hemorrhagic, pseudomembranous exudation, or recent blood or clot, the residua of a great afflux of blood. The arachnoid is milky and thickened and studded with Pacchionian bodies, which may unite it to the dura mater or even excavate hollows in the skull. The pia mater is generally thickened, coarse, tough, and bathed in serum, except where it is adherent to the cortex. These adhesions are found in almost every advanced case, and when we remove the pia we tear up the superficial layers of the grey cortex from the summits of the gyri, and occasionally also from the declivities. This appearance is chiefly noticed in the frontal and parietal regions, and the whole or nearly the whole depth of the cortex may come away. The white substance is usually discolored and may be softer or firmer than it is normally. There are very often in advanced cases atrophy and diminution of the whole cortex and a great increase of fluid in the ventricles and other spaces. The ventricles also, and especially the fourth, present an appearance of pearly granules.

The pons and medulla oblongata are, according to Dr. Mickle, often atrophied and softened, less frequently indurated; their meninges are frequently thick and adherent.

Bevan Lewis speaks of three stages in the morbid evolution of general paralysis. The first is that of inflammatory engorgement and it is in the vessels of the pia mater that lesions are earliest witnessed, the lymphatic sheath being that in which the inflammatory change originates. Cases proving fatal at an early stage may exhibit to the naked eye no evidence of disease beyond a slight general cloudiness of the arachnoid along the course of the vessels in the frontoparietal regions and a very slight increase in toughness. The membranes may be rather more difficult of removal than in health, but there are no adhesions. Yet by the microscope may be seen an increase of the

nucleated protoplasmic cells of the adventitia of the vessels of the pia which are large, distended, and often tortuous. There is also a slight proliferation of the most superficial flask-shaped cells of the peripheral zone of the cortex and the vessels of the intima pia resting upon it. From these cells long processes extend deeply down into this layer. These changes undoubtedly commence in the vascular supply of the pia-arachnoid, gradually extend into the cortex, and eventually penetrate its deepest layers.

In the next place, the soft membranes become far more gravely implicated. There is a free exudation from the distended vessels into the meshes of the pia, and beautifully disposed meshworks of connective fibrils permeate the subarachnoid space. The membranes then become waterlogged and atrophy of the cortical layers commences. This is more marked in the sulci than over the summits of the gyri, the area of the cortical surface involved in the one case being far greater than in the other, and in consequence thereof the gyri become narrowed and attenuated.

The vessels in the pia mater lose the normal support received from the opposed gyri, and as more effusion occurs to fill up the space left by the receding brain, the natural support of their walls becomes lessened, and in the diseased state of their parietes there is a strong tendency to hemorrhagic transudation or actual rupture and hemorrhage. Thus blood may be transfused into the subarachnoid space or between the pia and cortex, or the delicate and perforated arachnoid may permit an extravasation on to its outer surface, so that the subdural space may thus become the site of a hemorrhage varying from a mere delicate film of blood or a simple rusty staining of the arachnoid surface, to a thick coagulum of blood extending over the greater part of one or both hemispheres. The coagulum may be completely encysted within a firm fibrinous investment. These encysted hemorrhages, which are not peculiar to general paralysis, appear to be due to an initial extravasation caused by the rupture of a diseased vessel in the pia-arachnoid, and to the subsequent rupture of newly formed vessels within the organizing clot. In none of these cases does it appear to have a direct inflammatory origin in the membranes. Similar conditions are also found within the cortex itself. The blood-vessels lose the normal support given them by the perivascular walls, and in atrophy of the cortex these perivascular canals become enormously enlarged and filled with exudate from the contained vessels; this distention of the perivascular canals favors the aneurysmal dilatations so often found, and the eventual rupture or transudation of the contents of the vessels into the neighboring tissue. Adhesions are constantly found, the pia mater is bound down to the cortex, so

that the removal of the former tears away the latter. Such appearances are chiefly noticed in the frontal and parietal regions, and the morbid adhesions in general paralysis are almost strictly limited to the summits of the gyri. The reason for this is the natural subsidence of compensatory fluid into the sulci, and the much greater recession of the atrophied cortex allowed for by the special position of the walls of the gyri is unfavorable to the formation of adhesions. On the summits of the gyri the pia-arachnoid is in close contact and does not permit of the accumulation of serosity to nearly the same extent as the sulci. As the inflammatory state of the lymphatic sheath of the vessels extends to the deeper layers of the cortex, other grave disturbances necessarily ensue. Thus we arrive at the *second stage*.

The implication of the perivascular lymph channels by the production of protoplasmic masses on their walls, and the blocking of these channels and impairment of the vascular tissues directly affect the nutrition of the nerve cells; a granular change ensues and fuscous degeneration leads to their breaking down into a fine molecular mass of débris. The lymph channels are not able to remove this, so the supplementary lymph connective element comes into play. The spider-like cells, or Deiter's cells, as they have been termed, rapidly increase in size and number, forming large amœboid masses of protoplasm which apply themselves to all the degenerative elements around, and by a process of intussusception remove such particles into their interior. They become the phagocytes or scavengers of the tissue, live, thrive, and multiply upon the degenerating masses of nerve cells and their extensions, and all effete material lying in their neighborhood is ultimately appropriated to their use. They are also destructive of the living tissues; they affix their sucker-like processes to any portion of the structure, and occasionally several of these active elements are seen completely covering a large nerve cell, which is in an advanced stage of decay or scarcely visible, forming a mere pigmented molecular groundwork. They are usually noted in great abundance in the deeper half of the peripheral or outer layer of the cortex, and, being unmixed with nerve cells, are here peculiarly clear and defined. Their destructive agency affects the medullated nerve fibres, which run parallel to the surface of the cortex as continuations of the apical processes of the cells of the lowest layers. These then are the first structures involved, and the apical processes of the pyramids are the first to undergo degenerative change.

In the *third stage* we find these cells throwing out innumerable fine processes, and a substitution of a felt-like mass of fibrillar connective tissue formed out of the effete material afforded by the atrophied nerve tissue. This does not seem to be a compression from sclerous

invasion, but the presence of the sclerous element is explained by its production out of already degenerated nerve elements.[69] Whether the disease commences according to Bevan Lewis in the vessels or in the nerve-cells as Mickle holds, is a question which still awaits solution.

Treatment.

The treatment of general paralysis depends so entirely on the prognosis and diagnosis that when the latter is unfavorable our hope of recovery fades away, and all that concerns us is the taking care of the patient for the brief remainder of his life. Yet the close similarity between this disease and ordinary mania, and the resemblances in delusions and ideas should lead us to hope that some day a cure may be found, especially as even now the remissions and apparent recoveries point to so great an improvement in the individual as to make us think that there can be but little of the malady left. Our aim, if we cannot cure, must be to bring about such a remission as may enable the relatives to have the sufferer once more among them, and to keep him at home during the remaining days of his decline. General paralytics may be divided into two classes: those in whom dementia commences at a very early period, who being quiet and easy-going by their nature are readily managed by their friends with the assistance of attendants, and those who when thwarted or restrained are subject to paroxysms of blind imbecile fury and violence which render them very dangerous and necessitate the appliances and skilled officers of an asylum. They require safe rooms with guarded windows, doors, and stairs, and must take their exercise within protected grounds, for they are not fit to walk in public thoroughfares. Happily they are so elated by the nature of the disease that they do not feel the restraint like others, and though they protest and declare that it is a shame that they should be in such a place, they will at the same time be in a state of boisterous hilarity and never even ask to be released. No patients so enjoy themselves in an asylum, or are so easily pleased and humored; a promise that what they want shall come some day turns aside their present ill-temper and the failing memory causes them quickly to forget the desire and the promise. Though they are childish, and can like children be easily led by tact and kindness, they are at the same time treacherous and dangerous. Regardless of consequences, they will make foolish and hazardous attempts to escape, will try and set fire to a room, or secrete a stone or the like to attack the object of a delusion. They are not to be trusted, they will take up sudden and unfounded dislikes to those about them and will use violence if not carefully watched.

In the violent excitement so often met with at the commencement of the second stage much may be done by medicines, the most useful being digitalis and bromide of potassium. With the latter chloral hydrate may be combined in order to procure sleep if it is deficient. General paralytics do not, however, go day after day without sleep like patients in acute delirious mania. Digitalis is often of signal service in doses of ℥xv. to ℥xxx. of the tincture. Repeated, if necessary, every three or four hours, it often produces a wonderful effect, soothing the patients' turbulence and restoring them to a state of comparative rationality so that they cease their destructive habits and filthy ways, wear clothes in decent fashion and take food. Opium and morphine are useful in some cases and may be tried with or without digitalis. Physostigmine and veratrum viride have also been recommended. Very good results, it is said, have followed the use of counter-irritation by blisters, cauteries, or setons applied to the nape, spine, or scalp, especially tartar-emetic ointments to the shaven vertex, suppuration being subsequently maintained, or linimentum iodi applied to successive halves of the spine.[61] When fits are occurring or threatening, chloral and bromide of potassium should be given, or chloral may be administered by the rectum, or chloroform may be inhaled. In the old days the perchloride of mercury was used in almost every case because it was held that the disease was an inflammation, and for inflammation mercury was the remedy. Nowadays it is given because syphilis is thought to be the cause of the majority of cases of general paralysis, and even if there is no history and no sign or sequela of the disease, antisyphilitic treatment is recommended on the chance of there being somewhere in the system this virus lurking. Patients are brought to asylums soaked in iodide of potassium and salivated with mercury. I have seen some rapidly sink under this treatment, unable to take food owing to the state of the mouth and debilitated by the too vigorous drugging. But I never saw a patient cured of general paralysis by antisyphilitic treatment.

After the excitement has passed away, to be followed either by a remission and return of quiet and rationality, or by mental and bodily weakness, our efforts must be directed to maintaning the strength and defending the patient from everything that can do him harm. Those who are most rational and think themselves perfectly well are better away from home, and from all that reminds them of their former life and tempts them to return to former occupations. They are better away from their wives, though this is not always easy to effect. Sexual excess, or what is excess to them, is certain to cause a breakdown, and those are better off in whom the disease has annihilated desire. Another great enemy of these patients is cold; they are

greatly affected by it and should be kept in as much warmth as possible. If they are too feeble to walk fast they should remain indoors, for driving in cold weather is certain to chill them, no matter what amount of furs they have on. They require a liberal diet and generous supply of wine. There is a tendency to fatness at one period, and it is a bad sign when this passes away and emaciation sets in. The stage of dementia and declining strength calls for the very best nursing, for such patients will be wet and dirty, and often the greatest care will not prevent this at night. They must not lie in bed night and day; when thoroughly cleansed and washed they should sit by day in an easy-chair, thus varying the pressure, for that which is most to be dreaded is bedsores. So low is the vitality that in spite of all we can do bedsores will occasionally form, but they may often be kept at bay by judicious treatment. The back and buttocks should be examined daily and well washed with soap. Any places that look red should be dabbed with spirit or a strong solution of sulphate of zinc. Some patients who are very torpid will wear a urinal or allow one of earthenware to remain between the legs during the night, but these are the few. Anything that will keep the back dry or prevent the urine from reaching a bedsore already formed is of immense advantage.

Insanity without Delusion.

The patients which have now to be considered will come before us for an opinion as to their legal position, and this must be decided first of all, the treatment depending mainly upon it. Those afflicted with mania, melancholia, or general paralysis present plain and unmistakable symptoms of insanity; they require treatment; about the insanity there is no doubt. But others we have to examine to decide whether they are or are not legally of unsound mind so as to be incapable of taking care of themselves and their affairs. And to this after due consideration and perhaps many examinations we may testify in the witness box of a court of law, or may be called upon at short notice and in an urgent case after brief consideration to give a certificate of insanity for the purpose of placing a person under restraint. We may also be asked for an opinion as to the legal responsibility of one who has committed a crime, or entered into a contract such as marriage, or may be requested to attest a will and so vouch for the testamentary capacity of the testator, or give evidence in case of a dispute after his death. When in courts of law we hear counsel discussing insanity, and quoting from reports the dicta of eminent judges and lawyers, it must often strike us that they approach the subject from a different point of view from ours. Ours is based upon

observations derived from daily intercourse with, and examination of, insane people; the lawyer looks to the authorities, the legal dicta on the subject, and as time changes men's views, and as the view of one eminent man may differ from that of another equally eminent, and as all these opinions are enunciated upon some one special occasion, and not upon insanity in general, it follows that great confusion exists in the legal mind.

"The two great divisions of mental disease, namely, 'dementia' (or 'idiocy') on the one hand, and 'insanity' (or 'lunacy') on the other, may be taken to be those which are at present in substance and in some form almost universally recognized. Though not identical in name, they are founded on the same basis and accordingly find a place both in medicine and in the English legal system. But at this point medicine and English law at present part company. Medicine, regarding insanity as a mental state resulting from disease of the brain, looks at the mind as a whole, and accordingly considers unsoundness in any one part or faculty of it as likely to render the entire mind unsound. But English law, on the other hand, to some extent at any rate, recognizes what is called a 'partial insanity.' The phrase 'partial insanity' sometimes means an insanity which is only partial as regards time, and exists at one moment and not at another; and when used in this sense it is better described as 'intermittent insanity'; at other times the expression 'partial insanity' is used to denote an insanity which the law supposes to be confined to one subject, and to the set of ideas connected with this one subject; or, in other words, to affect only one particular portion or compartment (as it were) of the mind, which is treated as being made up of several distinct parts."[62] This partial insanity of the lawyers is what we term monomania or insanity with delusions. It used to be called melancholia, and the criterion of it was the absence or presence of delusion. Sir John Nicholl, in the celebrated case of Dew *vs.* Clark, said: "I look upon delusion in this sense of it, and insanity to be almost if not altogether convertible terms. In the absence of anything in the nature of delusion, the supposed lunatic is in my judgment not properly or essentially insane."

Lawyers in the present day cling to this doctrine, and argue that a man who is utterly demented, whose memory is so destroyed that he does not know his own children by sight, or is unable to tell us what he was doing ten minutes ago is not insane because he has no delusions. But those who have experience of mental disorders know that there are many whose minds are so unsound that they cannot take care of themselves, yet present no delusions; of such unsoundness there are various forms.

Moral Insanity.

This term, which has been the subject of much controversy, was applied by Prichard in 1835 to an insanity which he says "exists sometimes with an apparently unimpaired state of the intellectual faculties," and he defines it as "madness consisting in a morbid perversion of the natural feelings, affections, inclinations, temper, habits, moral dispositions, and natural impulses, without any remarkable disorder or defect of the intellect, or knowing and reasoning faculties, and particularly without any insane illusion or hallucination."

Here, it will be observed, Prichard contrasts moral and intellectual insanity, morality and intellect. But morality is not a division of mind. We read and speak of the senses and the intellect, the emotions and the will, as component elements of the mind, but morality or ethics is something beyond these and evolved out of them. By morality we mean the principles of right and wrong by which men of different races, high or low, regulate their behavior for the preservation of self, or for the rearing and maintenance of offspring, doing all not to the detriment but the benefit of the other members of the society. Such conduct consists of the adjustment of acts to ends from the simplest to the most complex, whatever their special natures, and whether considered separately or in their totality.[63]

The evolution of conduct or morality follows the laws of the evolution of mind. The savage is higher than the brute, both in his self-maintaining and race-maintaining conduct. As the mind of man advances by evolution from that of the savage to that of a member of the highest civilized community, so do conduct and morality progress in furthering self-preservation, in fostering progeny, and in doing everything to promote the welfare of all fellow-men. This is what is meant by morality, not merely that which is the opposite of immorality in the secondary and technical sense of the latter word. According to the degree of evolution, so will be the complexity of the feelings and relations of feelings, the composition and ideas of relations of which mind consists. There cannot be highly complex ideal feeling without equally complex intelligence. The two coexist and the one is the correlative of the other.

If we trace the development of mind in the individual it is not difficult to observe the evolution of morality and conduct from childhood to manhood. The child learns to control its passions, desires, and temper, and knows that these must be subordinated to the wishes or commands of parents, or something unpleasant will follow. This conduct, at first simple and relating to but few things, becomes more

and more complex as years advance and the environment widens. Some there are who never learn the lesson, and remain constantly in opposition to those about them. Their entire life is one of misconduct, but of them I shall speak presently.

The development of conduct and morality may also be observed in societies, these ranging from the lowest savages to the highest civilized communities. The standard of conduct rises here as it does in the individual, the habits and customs of the lower races differing altogether from those of the higher. But the conduct, that is, the morality or moral sense of the highest communities is not the same in all the individuals. There is a certain number whom we call criminals for whom law, police, and prisons have to be maintained. For the prevention of crime and the elimination of this degraded and criminal class compulsory education and sanitary laws are required, and beyond this criminal class, but closely allied to it, are the insane whose moral sense is deficient or wholly absent, who have to be taken care of, either of the purposes of cure or because they are unable to live as ordinary members of the society to which they belong. These are of two kinds, those who having been for a time sane and healthy become through mental disorder altered men and women, and those who by reason of their defective development always lack the moral sense and remain in an undeveloped and childish condition through life.

The first division, those who having been sane become insane, presents fewer difficulties than the second, because we have a standard of conduct constituted not by society in general but by the individual himself, and with that we are able to compare his present state. The highest mental attainment which civilized man can reach is a right rule of conduct regulating the affairs of life with judgment, prudence, and restraint; consequently we may expect that any defect of mind will make itself evident first in this quarter. The higher centres of the brain and mind will be "reduced," and there will be an overaction of lower centres from the removal of the control of the higher. Applying this to conduct we find that the reduced brain gives way to the gratification of the senses regardless of consequences, permits indulgences in pleasure to the detriment of self or family, or sets at defiance the conventional laws of society or even the law of the land. The patient is reduced to the level of a child or an uneducated person, and the reduction may be so great as to bring him to the condition of an uncivilized savage. An insanity of conduct and morality is often witnessed, not as a special variety but as the result of any cause which affects injuriously the brain function.

All competent observers of the insane are agreed that in a certain

number intellectual defect is not the first or the most marked symptom. A man may possess a perfect memory, may be able to converse brilliantly, argue cogently upon many questions, may present no delusion or hallucination, and yet be a changed and altered man. His conduct is different from what it was formerly. He may not be immoral, and yet his morality or ethics is altered, and altered for the worse. His feelings and affections towards his wife and family are estranged. He is extravagant or penurious; his mode of life is altered, he neglects his person, is uncleanly, associates with people beneath him in station and habits, or takes up with amusements which formerly he would have condemned. Although so changed in feelings and habits, he may still betray to a stranger no defect and no delusion. In such a man some may say that they can discover no intellectual defect. But what do we mean by intellectual defect if a man justifies or laughs at conduct which is entirely foreign to his former life, or the life of those in the same rank of society—conduct which involves the squandering of his property, the impoverishing of his family, and the ruin of his health? The loss of all prudence, judgment, and restraint implies the degradation of his intellectual as well as his emotional centres, and to say that his intellect is sound seems to be nothing else than a quibble about words.

There are several classes into which such patients can be divided. There are some whose insanity throughout may be called moral insanity; they are changed and altered men, do extravagant acts, sometimes consort with loose women, often drink more than is good for them, are restless, sleeping little and rising early, and spending the day in an incessant round of foolish undertakings, often to the detriment of themselves or their families. It does not follow that all are immoral. Many are not, but they are all changed and altered not in the direction of depression but the reverse. If they were depressed, we should say they were melancholic, and if the melancholy were slight, we should call it simple melancholia, there being no delusions but only gloomy feelings. The moral insanity which we are considering is the exact obverse and counterpart of this, and we may call it simple mania. There are no delusions in the ordinary sense of the word, but the patient justifies and defends all that he does or wishes to do, often with considerable acuteness, and cannot be persuaded of his folly by the arguments or remonstrances of his dearest friends. We get excellent examples of this moral insanity in those who suffer from *folie circulaire*. When the gloom passes away and the cloud lifts, the patient feels a new man. A stream of fresh life courses through his veins and his conduct is shaped accordingly. The depression may not have been sufficient to cause him to be placed under

legal restraint, for in that state a man is often docile, passive, and easily managed. And frequently it is extremely difficult to sign a certificate for one in the opposite condition if there are no delusions, and if the conduct is marked only by acts of immorality or too great indulgence in drink. I had under observation for many years a gentleman who alternated between gloom and excitability, each lasting for a twelvemonth or more, never attaining a height which called for legal interference, but being a constant source of anxiety to his family and friends. In his extravagant state he was not immoral and never drank, but he embarked in foolish enterprises and each one of these periods was marked by the speculation undertaken at the time. He went on thus through life and died at an advanced age of ordinary bodily disease without anything like dementia. He came of a family in which there was much insanity. Of his father I shall speak presently; his brother had many attacks of mania and died in an asylum, and a sister tried to commit suicide.

This man never drank; in his hilarious state he may have taken more wine than usual but was never intoxicated. But we have excellent examples of moral insanity in those whose chief symptom is an uncontrollable craving for stimulants, alcohol, opium, coca, chloral, or the like. I have already (page 95) spoken of the various kinds of drinkers, the habitual drunkard, the true dipsomaniac, and those who have been called *pseudodipsomaniacs*, the latter being the patients who most deserve the name of the "morally insane." The disorder is constant and chronic, unlike the true dipsomania which is periodic and recurrent, with an interval of abstinence and sanity. These morally insane people if kept by force and restraint from drink will go on well and appear to be of sound mind, but the desire is ever present. They never miss an opportunity of getting stimulants and will resort to any fraud, stratagem, or device to obtain that which they so dearly love. In their sober moments they promise anything and will even take the pledge, but they have neither the will nor the intention to keep it. Their minds are weak and unsound and all honor and honesty are obliterated. Such people will ruin themselves and families, neither remonstrances on the one hand nor promises on the other averting their downward career, and for many there is no cure. Yet they may present no delusions and the intellect to the superficial observer is unimpaired.

The patients whose conduct alone indicates insanity are comparatively few. Far more numerous are they who at the commencement of an attack are altered in habits and feelings as well as conduct, yet have not as yet reached the stage of delusion. There is a period of this kind in almost every case of insanity, and many, as we have seen,

commence by depression. This is in itself an alteration, but the patient may be manageable and his conduct correct, and so the friends are not alarmed; but the depression drifts away and symptoms of excitement appear, and this may go on to mania with all kinds of delusions or hallucinations. Yet before these are reached we may have to do with a stage of altered conduct which may be difficult to deal with as legal *insanity*, and yet is undoubtedly morbid. The best proof of its being so is the fact that it is entirely an alteration and foreign to the nature and habits of the man when he was well. But it is difficult to rely upon this when we do not happen to have known the patient previously, for friends will exaggerate the change and he will deny it, and the conduct though strange may not be so outrageous as in itself to prove insanity. In many cases time comes to the assistance of our diagnosis, and conduct which is open to question this week may in another leave no doubt in the mind of any one, the mental disorder having made a considerable advance in that time. Where we have reason to think that this will occur, it is well to wait; but we should give orders that the patient should be watched as closely as possible. If he is not depressed, he is not likely to commit suicide or homicide; and if he creates a disturbance and falls into the hands of the police, this may materially assist the friends in their efforts to restrain him.

The stage of moral insanity is one on the way to mania with delusions. It is also not unfrequently a stage on the way to that much more serious malady, general paralysis. In the state of alteration which is frequently described as the first noticed in this disease, all kinds of foolish conduct may be seen. It not unfrequently happens that people are brought before magistrates charged with theft who are in this early stage of the disease, and it is not always easy to be certain of our diagnosis, or to persuade officials that a man apparently sane and in good health is really insane and has not long to live. A case of this kind came before me not long ago in which a gentleman in a public office had committed acts of theft for which he had been summarily dismissed. On careful examination we found, first a great loss of memory; he did not know how or when he had possessed himself of the articles in question, did not even know that he had them till they turned up in his room. He had taken various things not only in the office but from houses and clubs, but had no recollection of the acts, and said that he had had for some time an irresistible desire to purloin. He had been in a railway accident some two years before, and had been treated for syphilis for many years, the secondary symptoms having frequently returned. His walk was peculiar, especially when coming downstairs, and with his eyes shut he was

unsteady; his knee-jerk was exaggerated. There was sexual desire but at the same time impotence. His want of responsibility was established to the satisfaction of the superiors in his office. Where acts of theft are committed without an adequate motive, especially where the articles stolen are of little value compared with the position in society of the delinquent, the presence of general paralysis should be closely looked for, if he is one who might be the subject of that disease.

The state of altered conduct which is termed moral insanity may be a result of an epileptic attack or attacks. We know that every kind and variety of mental disturbance may follow epilepsy, great maniacal violence, insane impulses, or delusions. But when the fits are few or at long intervals, the feelings and conduct may be changed without any intellectual defect or delusion. Several cases of this kind have come before me in which an epileptic attack was the beginning of the trouble, this being followed by an alteration, and in one case by periodical fits of drinking. The occurrence of even one fit should make us closely watch the mental condition of the patient, and should prepare us for anything that may appear strange in conduct. Many patients, if they are single men or women, may have occasional fits in the night which neither they nor their friends know anything about, for they may not be severe enough to cause the tongue to be bitten or the urine to be evacuated. Some also may have the sensations of *petit mal* for a long time before they are recognized, the patients and their friends looking upon them as slight feelings of faintness. Yet the effect may be to reduce the brain centres to some extent, and so bring about that alteration in the individual which is manifested in eccentric or insane conduct.

The same alteration is not unfrequently seen in the aged. It may be very gradual, so gradual that it is difficult to say when the commencement took place and may show itself in an increase of emotional excitability, in telling stories over and over again, in want of purpose and ability to make plans and keep them. All this is harmless and calls for no interference, but now and then it takes the form of misconduct and is very difficult to deal with. An old gentleman, the father of one I have already mentioned (page 185), whom I knew well as the pattern of domestic virtue and paternal affection, in his latter days consorted with loose women of a very low class and wasted much money upon them. I do not think that any medical man could have signed a certificate of insanity, though the change was fully recognized by his family. Failing health happily put a stop to his practices.

Far more frequent are the patients who have had attacks of acute

insanity, mania or melancholia, and have recovered to a certain point but not entirely. In the present day when an outcry is raised whenever patients are placed in asylums, there is a tendency on the part of all physicians and friends to liberate at an early period of the convalescence those who have lost the more marked features of the disease. In many cases the result justifies this procedure, and some recover permanently and entirely, even beyond our expectations. But some there are who do not quite recover, and in whom the mental disorder is shown to be still present by their changed or depraved conduct or alienation of feelings from those formerly held most dear. There may be no delusion or conduct markedly and unmistakably insane, and the difficulty of restraining them may be great. Not unfrequently habits of drinking are engendered and do much to complicate the diagnosis, and sometimes a very moderate amount of alcohol seriously affects those who have already had attacks of insanity, blows on the head, or epileptic fits. Probably most asylums present examples of patients who have recovered to a very great extent from the insanity; they have lost the delusions and hallucinations. They do not hear voices, are not homicidal, do not think they are persecuted or watched by the police, yet they are incapable of behaving like ordinary members of society and adjusting themselves to the environment. Male patients in this condition are very apt to take drink which soon brings about a crisis. Females are jealous of others; wives are jealous about their husbands and accuse them without a shadow of excuse. They quarrel with their nearest relatives, mothers or daughters, so that it is impossible to keep them at home, and yet they will utter their complaints and tell their story with so much plausibility that only those who live in the house with them can see how insane they are.

Besides these various morally insane patients, the commencing, the semi-recovered, the senile, the epileptic, or the general paralytic, there is an important and difficult class which gives rise to much controversy and forensic battles. These are the weak-minded or imbeciles, boys or girls, who from early life have been deficient, below the standard of their fellows, destitute of the ordinary capacity of mankind. Here we have no former standard of health by which to gauge them, for there is no alteration of character or conduct. From childhood most of them have been peculiar, unable to learn like others, to go to school and take their place by the side of others, and many of them are quite unable to distinguish right from wrong. So long as they remain children they may be taken care of by parents and guardians, but when they emerge from childhood and have to assume the responsibilities of men and women, they come before us in various

ways, and for legal purposes our opinion will be sought concerning their mental state. They are not to be called idiots, though they are but one grade higher; they are the result of an inherited neurotic defect, or of convulsions or fits in infancy or early life, or their brains have been damaged at the time of birth. In humble life these defective boys and girls will very likely develop vicious propensities and swell the ranks of the criminal classes; in a higher station of society they are the torment and difficulty of parents. They may display at an early age a tendency to immoral conduct of all kinds and a total disregard for truth; they steal in a way which they think clever, but is in reality silly, consequently no school or tutor will keep them. They may be told with the greatest care and in the most impressive manner that it is wrong to steal and wrong to lie. They will repeat what is said to them, and assure us that they know it is wrong, but they learn it as a lesson, and it all goes out of their head like a lesson in Roman history or the Latin grammar; the next day it is clean forgotten and they go back to their normal habit as before. These young people are brought to us either for treatment or for an opinion as to their unsoundness of mind. With regard to treatment it is to be remembered that a defective brain such as is here present is not to be renovated so that it will become a sound and perfect organ. We may prevent its becoming more degraded and sinking lower and lower, but it will remain damaged to the end. Before consulting us the parents will probably have tried schools and tutors. Such children can hardly be kept at home; especially if there are others; and home is a bad place, for it rarely happens that both parents are judicious in the management, and one is irritated and intemperate, while the other screens their faults, takes their part, and harms them by foolish kindness. If they remain at home they are handed over to servants or attendants, and this fosters their natural love of inferiors, and the next step is the low society of the village public house. If they are to leave home the question arises, Where are they to go? It is very difficult to place them with other children; they quarrel, steal from them, invent lies and accusations against them. They require the personal superintendence and care of educated people who are competent by temperament and love of the work to undertake the up-hill task of improving these blighted waifs of humanity. The first thing is to find out some taste or some capacity which the child possesses. As I have said, they are not idiots, and many are capable of doing some one thing and doing it well. If this can be discovered it should be developed; it may be music or carpentering or needlework. Anything that will give occupation and employ the mind and body for a certain number of hours daily should be encouraged. Other education should be regu-

lated by the capacity, for it is useless to torment a child with lessons which it is wholly unable to comprehend or profit by. The only effect is to engender a hostile feeling between the teacher and pupil which is very prejudicial to the latter.

The unsoundness of mind in these imbeciles being of a negative and not a positive character gives rise to endless legal disputes, whether the issue be one concerning property or crime. As they approach the age of twenty-one or even at a later period, it becomes a question whether they are able to take care of property and of themselves. What can we say about them in a court of law? They have no delusions, neither are they changed in conduct, habits, or demeanor. They are as they ever have been, stubborn, eccentric, spiteful, mischievous, often horribly cruel, vain, perfectly devoid of truth, incapable of being taught, but picking up in a desultory way many scraps of knowledge and holding them with a most tenacious memory. Fond, perhaps, of some amusement or occupation, they may carry this on for a time fairly well, but they have no endurance and give it up, being unable to adhere assiduously and constantly to one pursuit. Some of them, the girls especially, are not utterly wicked. They may be good and affectionate and give no trouble, but being equally weak-minded they require the protection of legal authority, being quite unable to understand or manage property and being at the mercy of any unprincipled person who would marry them for their money. How are these weak-minded to be tested? If their conduct is correct and there are no complaints on that score, we have to inform ourselves of their capacity to take care of themselves and their knowledge of the value of money. Many will be able to add up the coins we lay on the table and subtract one amount from another. They know the value of shillings and pence, and how much they ought to pay for the simple purchases they make; but beyond this they are unable to go. If we ask them about income, and especially their own, they know nothing, and are wholly ignorant of the meaning of five per cent. or three per cent., or interest on investments. And if we question them upon the expense of living, the rent of the house they inhabit, or the cost of the clothes they wear, we find that their knowledge is so limited that it would be impossible for them to go out into the world and take a house or lodging and shift for themselves. It will be said, on the other side, that girls are not taught anything about income or investments, that all such things are managed for them by guardians or legal advisers, and this is what they often plead themselves. We must test them beyond these topics by the ordinary standard of knowledge as found in an average girl of twenty-one in the same rank of life, and so we may arrive at a decision.

Where in addition to inability to learn we have a history of depravity of conduct, our difficulty may be that this misconduct comes to us wholly or chiefly by hearsay, and we do not see it ourselves, it not being carried on in our presence. We question them about it, and with the aptitude for lying which they all possess, they at once deny the truth of the accusation, or minimize and explain it away as a trifle or joke. Occasionally, when driven into a corner, they will admit it, allow it was wrong and promise amendment with the most solemn earnestness and vows. We may be able to pronounce an opinion not on account of the wickedness but the silliness and incapacity of such persons, and obtain for them the protection of the law which they so much need.

Our assistance may be sought not only for the protection of the property of the weak-minded, but also in cases of alleged crime in which the responsibility of the individual is the question. Stealing, fraud, and even forgery are committed by them not unfrequently and may come before a court of law. Many such acts are done clumsily and stupidly and themselves betray the incapacity, but it may be necessary for us to prove the latter by other evidence besides the act itself. This may not only be one of fraud or theft, it may even be one of homicide. Not long ago an act of homicide was committed by one of these youths who cut the throat of an "unfortunate" girl in the street. When I questioned him as to his motive I came to the conclusion that it was nothing more or less than a desire for notoriety. He had been reading the accounts of certain murders committed in Whitechapel by an unknown individual known as "Jack the Ripper," and he wished to rival him. An imitativeness is observed in many who wish to equal or outdo others of whose exploits they have heard or read. Stealing is very common, and with some ingenuity they will try to throw the blame on servants or others in the house. I lately saw a girl who had altered checks of her father's from £2 and £3 to £200 and £300, but few of the weak-minded are as audacious as this.

There is one more class in whom we shall find failure of mind without delusion; these are the patients whose minds from old age or disease have fallen into decay. They are not vicious in habits and do not require legal restraint, but being weak in mind are liable to become the victims of designing people, and to be taken possession of by such for the sake of their property, so a contest may arise out of such proceedings. The most constant defect is loss of memory, which will vary from a slight forgetfulness to complete obliteration, and vary a good deal at different times. The degree then will be the contested point; if it is extreme there can be no question as to the unsoundness of mind, for a person who cannot remember what he did

yesterday, or perhaps even an hour ago, cannot be said to have a sound and disposing mind when he has entirely forgotten the contents of the will he has made, or whether he has made one at all. All these patients can remember what happened long ago, what they did when boys and girls or young men and young women; so that by keeping them to these dates, it may be argued that their memory is good. But the events of yesterday or last week are gone. Often they cannot tell the address of the house they are in, how long they have been there, or what they did yesterday or the day before. These are the important points, and a patient with such defect cannot make a valid will or execute any other legal document.

Impulsive Insanity.

There is another class of insane patients in whom no delusions are to be found and whose intellect is according to some unimpaired. These are the people whose insanity is manifested rather by what they do than what they say, that which they do being usually an act of violence, often a crime, for which they are liable to be punished unless it can be proved that, being insane, they are irresponsible. To this variety of insanity has been applied the term *impulsive*, it being displayed chiefly in impulsive acts of violence, especially homicide, the impulse being often of a sudden and transitory nature, the mental tension being relieved by the committal of the act.

In many cases the crime itself is held, and rightly held, to be evidence of the insanity, so causeless and motiveless is its nature; yet this cannot be said of all, and therefore in courts of law "impulsive insanity without delusion" is looked upon with great suspicion by lawyers. In the majority of cases other evidence of insanity will be found, and we should study such acts as they proceed from the undoubtedly insane in order justly to appreciate the pathology of them. The violent or mischievous actions of the imperfectly developed have already been considered under the head of moral insanity as seen in the weak-minded, in whom there has been an arrest of mental evolution, the normal level never having been reached. And it has been shown that from the imitativeness which is peculiar to them even homicide may be committed. But this "impulsive" insanity is a result not of defective development, but of a reduction of the highest brain centres causing a want of control, manifested not in general insane conduct or foolish talk, but in explosive acts often apparently causeless and unaccountable, the impulse not being ever present but coming and going, as is sometimes the case with hallucinations and delusions.

It is of the utmost importance that these impulsive acts should be studied in asylums by those who have the care of the insane. They attract but little attention because they are of such common occurrence, and being very rarely completed homicides or suicides, do not demand special investigation. We do not inquire why a patient attacks another patient or attendant, tries to commit suicide, puts things in the fire, or tries to set the house on fire, smashes the windows or destroys the furniture and his clothes. We simply try to prevent his doing such things and take all precautions necessary for his safety. Doubtless some feeling, or possibly some idea, dominates the mind at the time which the higher centres fail to inhibit, but it may be very difficult to discover what the feeling or idea is or was. The patient may studiously conceal or be unable to describe it even if he would. It may be the outcome of a delusion, or a wish to escape by murdering the attendant and so getting his keys or setting the house on fire. On the other hand, it may be a feeling by which the sufferer is driven to explode in some muscular act akin to the explosion of epilepsy, an act which may be a mere smashing of glass or tearing of clothes, breaking of chairs or rushing with tremendous violence at some bystander. Of this feeling we are not told much, for it is difficult to describe, but it is a portion of a neurotic inheritance and may be witnessed in a less degree among women in prison, many of whom "break out" periodically in fits of violence and smashing without being able to account for it, only stating that they cannot help it.

Many authors have compared these sudden impulses to the sudden convulsions of epilepsy, and there is beyond question a great similarity between them. They occur at intervals and are sometimes periodical. Sometimes they are severe, overwhelming, and not to be resisted, and may be compared with the *grand mal* of epilepsy; at other times they are slight and the patient is able to withstand them, perhaps for many years, and they are analogous to the attacks of *petit mal* during which consciousness is hardly lost, or if at all, only for a few seconds. They resemble epilepsy also in this, that the accomplishment of the act gives relief and dissipates the morbid impulse, at any rate for a time.[64] And there is another point of resemblance. It not unfrequently happens that when some act of impulsive violence is committed, the patient has no recollection of any of the circumstances and is quite unaware that he has done anything violent or extraordinary. This is akin to the automatic condition noticed sometimes in epileptics, in which they may travel considerable distances, or do things which they never would have done if conscious, and yet do all in so apparently sane a way that those who see them at such a time

are quite unable to detect anything amiss. I knew a gentleman, an epileptic, who one evening was dining with friends at Richmond. He left the table during dinner, went to the railway station, took the train and returned to his hotel in London, gave up his ticket, paid his cab and did everything correctly and in order. When in his wife's room he woke and was surprised to find himself there, for he remembered nothing after his sitting down to dinner at Richmond. On another occasion something of the same kind happened to him at Brighton. If this man had had an impulse and attacked some one in the train or on his journey home, no one who saw him would have detected any insanity. There is a form of epilepsy to which writers, as Esquirol and Morel, have given the name of "masked" or "*larvée.*" It occurs in individuals who have had epileptic attacks, and instead of them paroxysms of violence and insane fury are manifested and appear to take the place of the ordinary epileptic attack; later on the latter may reappear. This cessation of the fits and the stage of insane impulse are closely akin to the interparoxysmal periods of automatic and unconscious action which have just been mentioned, and the occurrence of epilepsy, even at a remote period or in childhood, should be carefully investigated. That this insane impulse to kill really exists is sufficiently proved by the confession of those who have labored under it and have sought assistance and restraint to prevent the commission of the act. Such cases are on record; the patient has appeared to be sane in all respects, but has stated that when opportunity has been given the temptation to kill has been overpowering; a schoolmaster, for instance, amidst the sleeping boys, had an irresistible desire to strangle one of them. There is no doubt that a sudden temptation may cause the sudden impulse. I was called one day to a lady lately confined who had been left alone in a room with the infant; a sudden impulse seized her and she threw it out of the window. Fortunately, it fell in the garden and was not seriously hurt. She had been "odd" for some days, but there seemed to be no delusions or any apparent motive for the act.

Though genuine impulsive insanity undoubtedly exists when an insane desire to kill or to commit suicide is the only discoverable symptom of mental disorder, yet close investigation will often reveal other tokens of insanity or other motives for the homicide. It is very difficult to arrive at the real facts of the case. A part, such as delusions or hallucinations, must come from the individual himself, and these he may be unwilling to divulge; part we must hear from his friends, and they may tell us little, for some people can see no insanity in any one unless he is a raving maniac, while others will not acknowledge that they have noticed anything amiss, for fear they will be

blamed for not taking precautions for the safety of the patient or those about him. In the *Journal of Mental Science* (Vol. XXIX., page 387) we have recorded a case of homicidal impulse. A youth aged nineteen, who had always lived on the most affectionate terms with his mother, "in the morning ordered a present for her, took his meals as usual, and in the evening went to a young men's meeting connected with the church he attended, returning home about nine o'clock; had supper and read a religious book. He then said 'good-night,' kissed his mother and went off to bed. Shortly afterwards his mother went to her room. He lay down in bed but could not sleep. The awful impulse had seized him. In vain he tried to shake it off. He got out of bed, went down to the coal cellar, laid hold of the coal pick, and returned upstairs with it to his mother's room. The door creaked as he pushed it open and he hoped the noise would wake her, but alas! there was no such result, and in an instant the pick was buried in the sleeping woman's neck. A second and a third blow followed, one with the sharp and one with the blunt end of the hammer. Then he felt as though his brain were on fire." He wandered about the neighborhood for three days and then, having come to himself, as he expressed it, returned to his mother's house. When questioned about it several months later he said that for a year or more he had suffered from almost constant headache, and referred the pain to the parts corresponding to the longitudinal fissure. He said he tried his utmost to resist the impulse, but found it uncontrollable. After the act "something told him he had done wrong, and he felt as though his brain was on fire."

What was the previous history of this lad? He was always a most affectionate son and steady in his habits, but when twelve years of age his schoolmaster reports periodical fits of moroseness, at which times it was impossible to elicit answers to questions. Sometimes his conversation was rambling, incoherent, and vague, and he would break in with a remark not having the least bearing on the subject. At other times he was led away by an exuberance of spirits far from natural. After being for a time with a lawyer, he became a clerk in a merchant's office and went on well for some years. Then on March 24th, being sent with a parcel to the railway station, he went off without the slightest preparation from Northampton to Liverpool and stayed a fortnight. He could give no explanation of this freak, which seems to have been made in obedience to some unaccountable and sudden impulse. He then went back to his office work, which he performed satisfactorily and punctually, but his fellow-clerks noticed him staring vacantly out of the window, at other times absorbed in contemplation. He would knit his brows and grind his

teeth, or remain for hours without speaking. All these symptoms were more pronounced a few days before the assault, and a clerk remarked to a friend that "something ought to be done about Thomas." Nothing was done and the homicidal attempt followed. Fortunately it was not fatal. This appears to have been a well-marked case of homicidal impulse, but there was evidence of mental disorder having been noticed for a long time previous.

Dr. Clouston[65] gives a graphic account of a patient in Morningside, a medical man, who for a long time, even while engaged in busy practice, was haunted by an impulse to commit murder or suicide. "He had no insane delusions, he could reason well; affectively, he was fond of his wife and family and friends; he had not a cruel or criminal disposition—quite the reverse; he had no outward excitement, no signs of outward depression like an ordinary melancholic patient; his mind was not enfeebled, yet he wanted to kill his patients and his children and had much difficulty in restraining himself from so doing, and he actually could not restrain himself from suicidal acts." He had had a most arduous practice without any holiday and a very long illness. "Two years previous," he wrote when convalescent, "I had a fall on my head which stunned me at the time. I may say I never felt really well since the fall, though I did my practice. When in a train I was afraid I should jump out of the window, and when I saw one in motion I felt I must jump under it. I was afraid when applying nitrate of silver to the throats of my patients, that I should push it down. I was terrified to apply the midwifery forceps lest I should not be able to resist the impulse I had to drive them up through the patient's body. When opening abscesses I felt as if I must push the knife in as far as possible. When I sat down at my own table I used to have horrible impulses to cut my children's throats with the carving knife. At the sight of pins I had a feeling as if some had got into my throat. Whenever I saw a knife, razor, or gun I was afraid I should do harm by a sudden impulse, the will having hardly the power to resist. I took opium several times from no deliberate intention, but by a sudden impulse which I could not resist when I was working with it in the surgery, but I vomited it."

This man placed himself in Morningside of his own accord, recovered, returned to his hard practice and relapsed. His case is most instructive as observed in the calm of the asylum and not argued in the contest of a court of law.

It is not common, however, to find cases of genuine homicidal impulse, and many which at first sight appear to be of this character turn out to be those of delusion or persecution. Dr. Orange mentions a woman[66] who murdered her child and was acquitted on the

ground of insanity, the judge himself directing the verdict. The murder was looked upon as one of sudden and uncontrollable impulse, but Dr. Orange, under whose care she was at Broadmoor, tells us that the act was committed not from impulse but delusion. She did not want to live, and she remembered that she thought it would be a right thing to kill the children before she killed herself. She lay awake all night thinking it over, and when her husband in the morning asked her how she was, she said "Better," in order to induce him to go to his work and leave her; so little of sudden impulse was there.

Opportunity for the examination of a homicide is often very inadequate. It may be a hurried colloquy with a prisoner in a prison-room in the presence of prison officials. And in this country we labor under the disadvantage of being obliged to question the prisoner as to the commission of the act, which, strictly speaking, we have no business to do. The accused must first be found "guilty" or "not guilty" before the question of insanity arises. A singular case is within my knowledge. A gentleman, sorely tormented by "voices" and delusions of persecution, was sent by his friends to the Cape. The "voices" were so bad on board the vessel that he left it at Madeira, and then wandered about in many lands, flying from his persecutors, seeking rest but finding none. He returned to England and I was asked to see him, but before I could do so he left London and went into the country. Here his vague movements attracted attention; he was looked upon as a suspicious character, and two men, not police, took upon themselves to arrest him. Here at last his fears were realized and his persecutors had come, so he took out a revolver and shot one dead. At the trial he was acquitted not on the ground of insanity but on the facts, as it was proved that the men attacked him first without any justification; and the following day he was sent to an asylum, but not as a criminal lunatic.

I believe that more homicides are committed or attempted by those who hear "voices" than by any other insane persons, and that many of the cases of so-called morbid impulse may be explained in this way. For many such persons appear to be sane in every other respect, to fulfil the duties of life and to pass as sane even among their friends. The "voices" may not trouble them always; there will be periods of remission, and then if health declines or worry comes, they may return with great severity and order the sufferer to commit homicide or drive him to suicide. But all the time he may carefully conceal the fact that he is so tormented. A melancholic patient, too, like the woman mentioned by Dr. Orange, may kill some one else, as a child or children, because he or she is going to

commit suicide afterward, and does not wish to leave them behind, or may even murder some one in order to be hanged for so doing. Some also will commit the crime, or attempt it, in order to bring their grievance before the public, they having the delusion that they are defrauded in some way or other of their lawful rights. In all cases careful search and examination must be made. It may be necessary to see an accused person many times, to see a woman at various periods of the month, to observe such a one without his knowledge, in the night or at meals, and to see what he writes, if he can be got to write. We shall have to discover a motive for the act, if there be a motive, and the method of its performance, his preparations and present feelings with regard to it; to ascertain, so far as we can, the presence or absence of hereditary taint, his history as regards former attacks of insanity, epilepsy, inebriety, or blows on the head; to learn, either from personal inspection or reliable evidence, his conduct and demeanor after the committal up to the time of our examination, and to compare all that we see with what we hear.

This will apply equally to those whose impulse urges them not to homicide or suicide but to other acts as destructive smashing, stealing, popularly known as kleptomania, unnatural offences and the like. The whole history of the individual must be gone into, and if we have the opportunity of carefully examining it, we shall probably be able to decide whether the act is the outcome of insanity, violent temper, or a degraded mind.

Dr. Mickle has written[67] a very interesting paper on obsessions and besetments in which he points out that many are simple or absurd tricks, comparatively harmless, trivial, or incongruous. Such are the kinds which compel people to count all the gas jets or the trees, to retrace their steps and count over again, to walk on particular stones or touch certain objects. Such people cannot write a letter or do some similar act without doing some other trivial performance first. They do not stop here, however, but advance in many cases till the stage of insanity is reached and the obsession becomes a *possession* and rules the subject's life. From self-questioning and doubt are developed the various delusions of the melancholic, the fear of having done wrong, the dread of impending punishment with great anxiety and anguish. And not only are these gloomy feelings and delusions evolved, there are frequently *impulsive* acts compelled by the compulsive thought or compulsory feeling, acts which may be destructive or mischievous, theft, drinking, arson, murder, or suicide. And so we reach what has been termed *impulsive* insanity, developed from a stage which may at first have seemed unimportant and merely odd. Such apparently trivial obsessions in neurotic persons ought

never to be neglected. The acts will vary from the slight and trivial vagary to examples of self-killing and man-slaying.

THE TERMINATIONS OF INSANITY.

In the consideration of the terminations of insanity is involved the question of prognosis, a question of the greatest consequence, but one often difficult to answer, especially at the outset of an attack. We may refer to statistics, but almost the whole of these, it must be remembered, are derived from asylum cases and asylum treatment. When we are called to a recent case of insanity, one not complicated by general paralysis or epilepsy or other unfavorable symptom, we confidently pronounce a favorable prognosis if proper means are taken. We may have to tell the friends that to effect a cure, it is absolutely necessary to place the patient under restraint or in an asylum, and then frequently they declare that they will not consent to such a step. Our opinion will be gravely affected by such determination on the part of relatives, who are often the worst friends of a patient. In other cases our prognosis will be unfavorable. The malady has already become chronic and we are compelled to say that recovery is hopeless; or symptoms of general paralysis are so marked that there is no chance of any save temporary improvement. In all these incurable cases the probable duration of life is a matter often of great importance and we shall be closely questioned thereupon. In general paralysis the duration will be short; in apoplectic paralysis, though possibly longer, it will still be short, and paralytic epileptics do not, as a rule, attain old age. But chronic mania may exist for years. In every asylum we see aged inmates, especially women, who have been insane for perhaps forty or fifty years, and live their life to three- or fourscore years, dying of some ordinary disease as bronchitis or waning with age alone. Of such it may be said that the insanity has made no difference, that they have lived as long insane as they would have lived sane. In a small asylum for the upper classes I have under my care at the present time (December, 1896) 24 female patients. Of these, 4 are upwards of 80 years of age; one has been an inmate of the asylum 52 years, one 49 years, and another 24 years. Three are upwards of 70 years and they have been patients in the same house 50, 45, and 44 years.

The statistics of insanity are many in number, but they vary according to the mode of calculation, and owing to the difficulty of ascertaining the after-history of patients, they must in a great measure be imperfect. I know none more reliable than those of the late Dr. Thurnam, who, while at the York Retreat, had singular facilities for

tracing the subsequent history of the patients discharged, and among various tables he gives the following:

"Table showing the history of 244 persons who died at or after discharge from the York Retreat, from 1796 to 1840, with the number who died during and after recovery from the first or subsequent attack of mental disorder."

Cases followed through life.	Died insane during the first attack.	Recovered from the First Attack.				
		Total.	Recovery permanent. Died sane.	Had subsequent attacks.		
				Died sane.	Died insane.	Total.
Males, 113	55	58	21	6	31	37
Females, 131	58	73	24	14	35	49
Total, 244	113	131	45	20	66	86

These patients were all of the middle ranks of life, not poor and destitute, but well-to-do people, as the Friends generally are. Two hundred and forty-four become insane, and of these only 131, or 53.6 per cent., recover from the first attack; the rest never recover and die insane. But looking at the after-history of the 131, we find that only 45, or 18.4 of the whole, remain permanently sane. The rest are again insane, once or oftener, and of these only 20 die sane. "In round numbers, of 10 persons attacked by insanity, 5 recover, and 5 die sooner or later during the attack. Of the 5 who recover not more than 2 remain well during the rest of their lives, the other 3 sustain subsequent attacks during which at least 2 of them die." It may be said that these are statistics of a bygone age, that the period from 1796 to 1840 is not to be compared with the end of the nineteenth century. In some respects we may have advanced. Probably at the present time our various sedative drugs have reduced the mortality of cases of acute insanity, and there are fewer deaths from acute delirious mania and melancholia and more recoveries. But Dr. Thurnam's percentage of recoveries (53.6) is not a low one. The rate of recovery calculated on admissions in the asylums, hospitals, private asylums, and single houses in England and Wales during the ten years 1886–1895 was 39.28 per cent. Sir A. Mitchell's statistics of 1,297 patients, excluding readmissions, showed a recovery rate of 47.3.[68] "It must be remembered," says Dr. Hack Tuke,[69] "that there is very little general paralysis in Scotland, and therefore the above high rate of recovery cannot be expected in England and Wales." There is no reason for questioning Dr. Thurnam's statistics of relapses; as he was able to trace the after-history of every patient who had been at the Retreat in

whom death had occurred his conclusions possess especial value. His figures show the risk of relapse in patients who have had an attack, and bear out what I have said as to the marriage of any of them. It would be uncharitable, and not only so but unscientific, to look upon those who have once been insane as lunatics for the rest of their lives, yet when once a man or woman has been insane, no one can tell when he or she may not again become so. The relapse may not bring about permanent insanity. Like the first attack it may pass away, to be followed perhaps by a third or a fourth. These may follow some definite cause as a shock or worry or illness, for the changes and chances of life are not to be guarded against. But often a relapse may occur without any assignable cause by that periodicity which marks so much of human life and human disease, and though recovery may take place after many attacks, yet in many cases there comes a time when the patient's strength is not equal to the strain, and he dies or becomes permanently insane. And even though recovery may take place again and again under suitable conditions, yet these may be sometimes wanting, and the sufferer may through ignorance or want of care be exposed to great risk, or, before proper measures can be taken, may inflict injury on himself or others, or seriously damage his property.

Of the prognosis in the various forms of insanity I have spoken as I described them. Many are curable under proper treatment, but this is all important, and must greatly influence the opinion we give. The friends of patients are so unwilling to admit the existence of mental disorder that they will consult any medical man rather than an alienist, will engage the most inexperienced or incompetent attendant rather than one skilled in such cases, and will keep a patient at home or in unsuitable lodgings rather than send him to an institution where he can have open air and exercise in proper grounds. I have been told by friends that they would sooner see him die than take the latter step, and not a few have died in this way. Many after weeks or months of home treatment are brought at last to asylums on account of the expense or trouble, and then it is expected that they will recover in a few weeks because the friends were told, perhaps months before, that this would be the result of proper sequestration. In many cases the chance of recovery is past and gone, for if there is one thing in connection with insanity more certain than another, and more borne out by statistics, it is that recoveries are most numerous in cases which have been properly treated at an early date.

The same feelings which cause friends to withhold their insane relatives from an asylum prompt them to take them away at the earliest possible date, as soon as there is an apparent improvement, which

may not be real recovery but only a step towards it. They come and visit a patient under treatment and spend a short time with him, during which he exercises great control, and by dint of much exertion is able to talk rationally. Very often this effort is productive of much evil, and after such a visit he is markedly worse. Yet if this is represented and the visits stopped, such prohibition is looked on with the gravest suspicion, and the friends are quite certain that the patient is well and is being unjustly detained. Many in the stage of half-recovery will exclaim violently against the place they are confined in and the wickedness of their detention. This is not a sign that they are well, and I have often had to tell the friends that if they will wait patiently, they will find that as convalescence advances the complaints will grow less and less, and the sense of well-being and restored health will work an entire change so that a man will become friendly and grateful to those about him, not pressing unduly for his liberty and willing to take advice concerning his future. This change of feeling will be familiar to all who have charge of the insane, and it is a change which often greatly surprises the friends of the patient. It is very satisfactory to find it, and to know that there is a consciousness of former mental disorder, and an amendment and return to right reason, and often we hear a man wonder how he could ever have held the ideas and delusions which now he utterly repudiates.

But this is not the case with all. Some will never admit that their ideas were delusions, but they will try to justify or explain them away, will deny having held them, and argue that there was no necessity for placing them under restraint. They will assert that their disorder, depression, or excitement is the result of their being shut up, ignoring everything that happened previously, and attributing evil motives or ignorance to all concerned. The difficulty of deciding as to whether a patient is recovered or not is sometimes great, though generally it is much easier for the physician who sees him continually than for the friends who visit for an hour or so. Each, however, can help the other. The physician may never have seen him before the illness and does not know what is his normal condition. Often I have been assured by near relatives that a patient has not recovered because his conduct, demeanor, or habits, though not absolutely indicative of insanity, are not the characteristics of his sane and healthy state. But all friends are not so candid; those who have had sad experience of his mad behavior dread his release and wish him to remain till recovery is complete, while others are over-eager to set him at liberty, being afraid of his displeasure and threats, forgetting that a half-cured man is of all the most likely to be dangerous to them.

We shall have to base our diagnosis of recovery upon what we hear

from the patient himself concerning his illness, its oncoming, its cause and symptoms, and may detect delusions still remaining concerning them and especially the cause. And we must compare that which he says to us with what he confides to others, whether friends, attendants, or other patients. The insane soon find out what it is that keeps them in an asylum. Much cross-examination from commissioners, doctors, and others teaches them that it is this or that delusion that stamps them as uncured and prolongs their detention. They will then declare that it is gone, and that they have quite given up the false idea. The truth of this is often hard to determine and it has to be gauged by their conduct and demeanor, and ascertained by what is said to others or written. A patient's letters will frequently show that a delusion, though denied, is still present, and when there is a doubt they should be carefully examined. Moreover a man may declare that he has never had delusions, he may single out the small grain of truth which underlies so many of the delusions of the insane, and may assert that this justifies all that he has said. It may be thought that a patient cannot be recovered who justifies previous delusions, but much allowance must be made for individual temperament and character. Some men and women cannot bear to think—and much less to confess—that they have been insane or have entertained insane fancies, or done insane acts, and satisfy their consciences and salve their wounded pride by explaining away as much as they can. This we must often overlook and not too rigidly compel confession, or too closely cross-examine as to the details of the past. The best way to dispel delusions is to avoid discussing them. We must let bygones be bygones, for delusions spring to such an extent out of the feeling of the moment that a patient a month or two afterwards in an altered physical condition cannot go back to the ideas he held in his former state and may deny or justify them, because he is unable now to enter into a contemplation of another state of things. We have to consider the whole manner in which he speaks of himself and his treatment. If he is ashamed and would rather let the subject alone and talk of the future and returning to home and work, and if his talk of the present and future is healthy and hopeful, we must not be too particular in judging of the manner in which he speaks of the past. But if he is perpetually harping on the past, reviewing and discussing every detail, as he imagines it happened, and always complaining and threatening retaliation, lawsuits and the like, and if he craves for liberty in order to commence such proceedings rather than return to his usual avocations, we must look with suspicion on his condition, and advise further detention or surveillance in some form or other. In coming to a decision upon such patients there is

no rule to be observed absolutely. The recognition of insanity or recovery thereform depends chiefly on experience and the intuitive appreciation which experience gives.

Very difficult is it to decide as to the recovery of a patient whose insanity has been displayed not so much by delusion as by acts and conduct, and partakes rather of the nature of so-called moral insanity. Kept under restraint he has no opportunity of indulging in acts of extravagance or vice, or of getting drink which brings him to them. Promises he will make with earnestness and sincerity, but we have to consider whether he is able to keep them if free. We must take into consideration the way in which he speaks of his past conduct and perhaps justifies it. A patient may have no delusions in the ordinary sense of the word, but if he justifies and defends outrageous conduct and cannot see that his acts are those of a lunatic, it is impossible to say that his intellect is unharmed or his mind sound. Nothing but a trial can set this question at rest.

The English legislature comes to our assistance in every case of doubtful recovery and enables us to send a patient forth into the world "upon trial" provided he goes "under proper control." What the control is to be is not specified. It may be the companionship of husband or wife, of sons or daughters, or a medical or other attendant. He need not be restricted to one locality, but must not go beyond England or Wales. This "leave of absence" the commissioners in lunacy will grant for three months, and will renew it, if necessary, for another three, and if there is a breakdown, the patient can at once be brought back to the asylum without further formalities.

TREATMENT.

The first physician to be consulted when symptoms of insanity are noticed in a patient will be the family medical adviser. He will have to pronounce an opinion before any specialist, and it often happens that the friends strenuously resist the calling in of the latter. The difficulty throughout will be the management not of the patient but the friends. They will refuse to believe that the mind is affected, will try to explain away all the alteration of conduct or extraordinary acts, and tell us that the symptoms have only lasted a few days or weeks when they have been gradually increasing for months or years. From many the information received is wholly misleading and has to be supplemented by what we hear from others, more distant relatives, friends, or attendants. From them we may gather the true but widely different history.

The opinion of the physician will be much influenced by the dura-

tion of the illness, if he can arrive at the truth, and the family attendant is favorably circumstanced in this respect. That which comes on quickly may go off quickly, but that which has slowly and insidiously advanced for months past is not likely to vanish suddenly, but implies a course of treatment which must be continued for some time. And the reason why it has been going on so long is the unwillingness of the friends to see anything amiss; they shut their eyes to the plainest facts and refuse to take advice till something occurs which can no longer be concealed or ignored. Insanity in a large number of cases is a curable disorder, but that upon which all authorities are absolutely agreed is that for cure, early treatment is necessary. This period, the stage when treatment is valuable and recovery almost certain, is constantly lost by the obstinacy of friends, who think they know how to treat the disorder better than any doctor. When at last the patient is brought to us, he is a confirmed and hopeless lunatic, requiring care not cure, to be kept in safety for the term of his natural life, and when he is placed in an asylum they are greatly astonished if we say that it will not cure him now, because they have been told for a long time that an asylum would effect a cure and was the proper place for such a sufferer. When a physician is consulted he will be asked not only to recommend treatment but to give a prognosis. This again will be affected by the duration. If we hear that a man has had delusions and hallucinations for more than a year, our prognosis is unfavorable; but it will also greatly depend on whether the friends are willing or unwilling to take the proper steps to bring about recovery. The physician called to a case of ordinary illness receives a coherent and true account of the symptoms, past and present, from the sick man, his friends, or nurse. He is generally enabled by what he hears or sees to arrive at a tolerably accurate diagnosis and prognosis, and is confident that all will be done for the sufferer that can be done, that his directions will be strictly adhered to, and that the patient himself will second his efforts and try to get well. When the friends of an insane patient are told that the disorder is curable, but that to effect a cure it is necessary to place him under restraint or in an asylum, they straightway vow that they will not hear of such a thing, that an asylum means legal formalities and publicity, that an asylum will stamp him a lunatic, will interfere with his future career, and prevent his daughters from getting married.

If we are consulted sufficiently early, it may be possible to ward off an attack of impending insanity, and at this time there will probably be less difficulty in getting our advice followed, inasmuch as it will not be so distasteful. In the large majority of cases removal

from home in some form or other will be necessary, such removal depending upon the aspect and probable course of the disorder, which will have to be carefully studied before our advice is given. If a patient is depressed, the depression having existed for some time with but little variation, and there being an absence of all acute symptoms, if food is eaten and walking exercise can be taken in public places, we may recommend change in the shape of travel with suitable companions. This however requires much consideration. What the patient wants is *distraction*, and it will be well if he leaves behind as much as possible that which is a care and anxiety to him. An anxious wife to whom he can always pour out his sorrows, imaginary or real, is better absent; friends are better than near relatives, strangers are better than friends. The locality must be carefully chosen and extremes of heat or cold avoided. There can be no greater change for any one living in the United States than a trip to Europe. The sea voyage is not long enough to be monotonous, every kind of climate can be selected according to the time of year, and every taste can be gratified in one country or other. If such a journey is impracticable, it will be well to send him as far from home as possible, to interdict frequent letters, and to create new thoughts and interests which shall supplant and oust the morbid ideas and fancies which fill the mind.

All patients, however, cannot be treated in this way. Many show signs of depression at first, but this rapidly changes into excited melancholia or mania, requiring an amount of restraint which makes travel impossible. Others are excited from the first, and whether the excitement takes the form of grand or exalted ideas with lavish squandering of money or violence and angry feelings and accusations, restraint is equally necessary, and this must be set before the friends without delay in order that accidents may be prevented and treatment adopted which may conduce to recovery. Where is such restraint to be carried out? Friends, nine out of ten, will try to avoid an asylum, and will beg to be allowed to try a private house with attendants. In the case of women some such method may be tried for a time, if there are sufficient funds for an adequate staff, companion and nurses, and a suitable house with private grounds. Patients also suffering from very acute delirious mania, as has been said already (page 127) may be treated as sick people in a house of this description. But when a man is excited and dangerous the first place for him is a well-conducted asylum, and it is our duty to put this strongly to the friends. We shall be met with every conceivable objection. Wives are afraid to take any step of the kind without the consent of the husband's relatives, and of these there are sure to be some who not being personally

incommoded will strongly oppose. Husbands want the sanction of the relations of the wife; each is certain that the other will never forgive this method of treatment, and then they will bring forward an argument which is continuously used but is entirely chimerical, that the individual will go "quite mad" when he finds himself in an asylum amidst a number of other patients. That this theory is utterly devoid of truth is well known to all who have charge of the insane, for so far from patients being worse when first placed in an asylum, it is a fact of everyday experience that they are generally better, so much better that for a time we are often puzzled to find out the facts stated concerning them, so greatly are they influenced by the orderly discipline and regularity of the place, by the sight of others behaving in a quiet and decorous manner, and by the feeling that there is an authority over them to which they must succumb.

The friends may not be persuaded at first; they think they know more about it than we do, and will take care of the sufferer themselves. This has often happened, but in a few weeks they have had enough of the experiment; the patient has got worse instead of better, and their nerves are completely unstrung by anxiety and watching, so they are much more disposed to listen to argument. They have found out that he is quite as indignant and angry at being restrained by them in a private house, especially if it is his own, as he would be in an asylum, and probably makes more determined efforts to get away because facilities for escape are more numerous, and he recognizes no authority for his detention. If instead of being maniacal, he is acutely melancholic and suicidal, all places will be alike, but in an asylum he will not have perpetually before him the faces of those who are dearest to remind him of his former state and changed condition. Unless a patient can be placed in a position well suited for his recovery outside an asylum, he is better in one, and herein the poor have a great advantage over the wealthy, for when they become insane and troublesome there is no question or doubt as to what is to be done with them. They are placed at once in an asylum and receive early treatment of the most appropriate kind. If the friends can be brought to see that an asylum is necessary, the next difficulty is the choosing one. They will want the smallest that can be found, where the patient can bury himself in private apartments of his own and see nothing of the other inmates. He is, in other words, to sit with an attendant to watch him, brooding over his fancies from morning to night and night to morning. This is to perpetuate all the evils of home treatment.

A leading feature of insanity is the intense egoism, the extreme

concentration of all thought and feeling upon the one subject, self and all that concerns self. Whether the individual's feelings are those of self-satisfaction and exaltation or of gloom and despondency; whether he thinks himself the greatest man in the world or the most miserable, he is constantly absorbed in the contemplation of self and thinks that the whole world is directing its attention to him. If such a being is at home he generally contrives to make himself the centre and focus of every one's regard; and if he is away with a friend or a physician, or is placed in a family, he may be able to do the same, for in the majority of cases the arrangements of the household must more or less depend on the presence of such an inmate. This egoism will not be removed by his occupying private rooms in an asylum with special people to look after him. He becomes the focus and centre of these, and if he is to receive the visits of sympathizing relatives or their letters, and to pour out his complaints to them in return, the good of an asylum will be neutralized. Place him among a number of other patients and he becomes a fractional part of the whole. He is given to understand that the establishment will go on just the same whether he is there or not, but that being there and legally placed there, he must conform to the rules, his going away depending largely on his own behavior and observance of the precepts and advice which he receives from those in authority over him. He is encouraged to follow this advice by their approval, and is indulged with an amount of liberty according as he shows that he is fitted to enjoy it, liberty to go beyond the premises or to places of amusement, to have money at his command and choose his own recreation and occupation. This liberty he forfeits if he abuses it, and strict surveillance and watching are exercised until he shows that he can control himself.

So far from its being a disadvantage to a patient to be with others, it is very often an immense benefit, and for this reason an asylum should not be too small. There is a healthy public opinion among the inmates of an asylum as well as among those outside. A good-sized asylum offers materials for classification. If a patient does not behave properly in the room dedicated to quiet and orderly individuals, he will very soon hear of it, probably from some of the others, and will speedily find himself removed to one lower in the scale, perhaps two or three degrees lower, and from this he will again ascend on good behavior. Not only will his conduct be influenced by the example of those around him, his delusions and fancies will also be affected. Patients who cannot see that their own ideas are delusions can recognize those of others without any difficulty, and when a man is told by another patient to hold his tongue and not

talk such utter nonsense, it comes to him with far greater effect than if solemnly argued by some one in authority over him.

An asylum of a certain size offers many advantages in the way of occupation and amusement. The question of occupation is very important, for we supplant morbid thoughts by distracting the mind from them to others, which is of far more use than trying to oust them by argument. Though in the convalescing stage argument may sometimes be useful, it is very often harmful and likely to perpetuate a delusion by directing the mind to it. Occupation, however, for gentlefolks is a difficult problem, and here will be shown the tact and resourcefulness of the presiding physician, who must invent for each something to be done, not mere games such as tennis, cards, or billiards, but something which shall occupy the thoughts and be continuous, going on day after day, with a result to be acquired by mental effort.

I recollect at the Medical Congress of 1887, the president of the Psychological Section, Dr. J. B. Andrews of Buffalo, remarked that years ago when he used to note the large percentage of patients employed in some of the English asylums, he questioned in his own mind whether those statistics were really honest and correct. But after making use of occupation for years and having opportunity to control the matter, he fully believed that those statistics were correct. He employed at the present time in the Buffalo asylum from seventy-five to seventy-seven and seventy-eight per cent. of all patients.

Occupation for the lower classes is comparatively easy to find. They are accustomed in their sane life to work with their hands, and in asylum life there is much on which they can be employed, in farm or building work out of doors, in carpentering and other handicrafts indoors, and women can be usefully exercised in sewing and mending or in the laundry. The problem which is difficult is the employment of patients of the upper class. In point of outdoor exercise men have the advantage. They can take long walks, ride, or play outdoor games. For many outdoor exercise and hard exercise is a necessity; in subacute, restless, sleepless mania protracted muscular work will bring healthy fatigue and sleep, and act as a sedative more efficacious than drugs. Hard exercise will distract another whose thoughts are fixed unceasingly on melancholic subjects. I have known a man of his own accord dig all day in the garden—dig a pit and fill it up again if there was nothing else for his spade to do—and greatly profit thereby. This is not mere moral treatment, it is physical as well. Beyond mere occupation it has a physical effect. Says Dr. Clouston (*op. cit.*, p. 175), speaking of this restless mania: "No patient must on any account, or in any weather, except he is ex-

cessively run down, be kept in bed or in the house. I often keep patients out all day in the summer time. When they are getting better, they all say that they feel better out than in. There is no soporific nor calmative and no digestive like the fresh air." For ladies it is not so easy to provide outdoor exercise other than walking, but this is often most beneficial, especially to those who have never walked before, and they are many. I once had a patient, not in an asylum, in a state of profound melancholia and I got her to walk. She walked till at last she went twice every day from her house in Belgravia to Hampstead, a distance not less than sixteen miles, necessitating two people to accompany her. One curious feature in the case was that when I visited her she never would open her eyes, though she conversed freely. A long time after, when she had quite recovered, she sent for me, and among a number of others I did not recognize her. We saw each other with the eyes open for the first time.

Indoors ladies are better off than men; they have needlework of all kinds and music, but they cannot be always playing music any more than men can be always playing billiards, and we require for them something which shall employ their minds. Some may come to us whose brains have been overtaxed, and it may be necessary for them to rest and do nothing; but the majority have not undergone overwork, but worry, the worry of business or domestic trouble, and for them some mental occupation will distract the mind and supplant the morbid thoughts. They require something which will not end in a day, but will engross their attention day after day and week after week. For this I have found the study of languages very suitable. It is intellectual without being emotional, and is never-ending. I have known ladies study Greek and Hebrew, to say nothing of French or German, Italian or Spanish. Another occupation which I greatly advocate is drawing. If a patient has any taste or inclination for anything of this nature, flower painting, sketching from nature, or even copying pictures, it should be encouraged as much as possible. It occupies a great deal of time, is not emotional, and there will be a feeling of improvement and advance which will be very beneficial.

Not every patient, however, requires employment or amusement. To many an asylum is beneficial because it is a haven of rest, and this rest, as it is urgently needed, must be rigidly maintained. There is probably nothing that could be invented which does patients so much harm in their convalescing stage as the visits of friends, and nothing so hard to prevent. Naturally relatives wish to see how they are looking, how they are getting on, to hear what they have to say, and

any complaints they have to make. I have known a visit of this kind to undo all the progress that has been made, undo the work of many weeks, but it is hard to persuade friends who are often suspicious and think the asylum physician has some motive in keeping them away. The sight of a relative may recall all the troubles that were the origin of the illness and all the delusions that grew out of them. It will create a restlessness and discontent with the place, and a desire to be released which cannot be conceded, and when the visit is over there will be bitter disappointment, a sleepless night, and general deterioration. Later a visit may do much good, but one of the great advantages of an asylum is the removal from friends and the letters of friends. Rest and quiet are the remedies for many—no letters, no telegrams, no daily newspaper, if they are likely to worry or excite. When the patient is fit for occupation or employment, it must be supplied according to the standard and measure of his mental capacity, and care must be taken to regulate the amount.

A good deal of all the preceding may be summed up under the head of moral treatment, which is absolutely necessary for the treatment of the insane. Yet it must not be supposed that the whole of the asylum life is moral treatment only, even if a patient comes in and goes away recovered without having taken a single dose of medicine, as not unfrequently happens. The rest, the opportunity of getting abundant and undisturbed sleep, the good and appropriate food and drink carefully regulated according to the bodily condition, these are all matters of physical treatment, and upon them depends the recovery of many a sufferer.

Nevertheless we are much indebted to medicines for aid in our efforts to restore the mental balance, and these may be broadly divided into two classes, sedatives and tonics, though of course others may be required for any intercurrent ailments. Of sedatives and their use in some of the acute forms I have spoken incidentally. There is a long list of them. I can recollect the days when there was not one worth calling a sedative except opium, and that did harm in as many cases as it did good. Since then we have seen the rise of the bromides, chloral hydrate, chloralamide, paraldehyde, sulphonal, trional, tetronal, and others, some of which deserve mention.

Bromides.—As the bromides, especially bromide of potassium, were the earliest of all the sedatives now in use, they may be noticed first. None are more used. So universal is the administration of potassium bromide in the treatment of neurotic patients, whatever the character of the disorder, that scarcely any one escapes. That it is a most potent and useful drug none will deny. "It is a general depressant to the tissues, the frequency and force of the heart's action are low-

ered, the muscles are relaxed, sensation is impaired, and sexual vigor also; the receptivity of the brain is diminished, the motor area is less easily roused into action, the finer workings of the cortical cells are interfered with; there is mental apathy even to hebetude, and the memory is impaired."[19] From this summary of its effects it will readily be understood that in certain cases and at a certain stage it is most valuable, but that given to people already feeble or depressed it is very injurious and increases rather than removes the symptoms.

One reason of the universal administration of this drug is its safety. It may be ordered in ordinary doses without producing any dangerous effects, such as prolonged coma or narcotic poisoning or collapse. The worst that happens is some so-called bromism or bromide-acne, and this does not appear at once. Bromide is most useful, as Dr. Clouston has remarked, in the preliminary stages of insanity before the symptoms have developed into decided psychical aberration, when they are chiefly sleeplessness, irritable restlessness, and commencing want of control. Here a few doses of bromide at night may work wonders. It is a medicine to be given for a short rather than a long time. I once saw an old lady of seventy-five, who had lost her memory from age, and who had been sent into the country by her medical adviser and ordered to take sixty grains of bromide daily; this she had done for weeks till her speech was unintelligible and she was hemiplegic. All this passed away when the bromide was discontinued and she lived fifteen years without any return, the memory only remaining defective. It is most useful in the early stages of mania and in the clamorous and self-asserting excitement found in young people which often appears as the reaction stage after a long period of depression. I lately saw a young girl in this condition; she wanted to do just what she liked, however foolish, set her mother at defiance, and was inclined to run after men. It was a question whether she would not have to be placed under restraint, but a week's course of bromide produced an excellent effect and the removal was averted. As it is beneficial in the young and "sthenic," in excited mania and insanity from drink, so is it harmful in melancholia where it will hasten emaciation and increase the depression. Until it is discontinued it is often difficult to decide how much is due to the disorder and how much to the drug. But it is to be remembered that bromide is a sedative, not an hypnotic. Where there is great sleeplessness and it is absolutely necessary to procure sleep, bromide by itself is not sufficient. It may be given by day to procure quiet, but to bring sleep it should be combined with chloral hydrate. Twenty or twenty-five grains of the latter with thirty of

bromide often give an excellent result. There are other bromides besides the potassium salt, the two most commonly used being the ammonium and the sodium salts. These are said to be less depressing; they are certainly less potent. There are various others, among them the bromide of strontium, which I have given with advantage in epilepsy. It is said that the troublesome bromide-acne may be prevented by the simultaneous administration of five minims of the liquor arsenicalis.

Chloral.—This drug was the next sedative introduced after bromide, and it has been of immense service, though ill effects may have been caused by its abuse, especially in those who have dosed themselves with inordinate quantities. It has been superseded to a considerable extent by newer drugs, as sulphonal and paraldehyde, but the prejudice which has existed against it in the minds of some is, in my opinion, quite unfounded. The ill effects have, I believe, mainly been caused by the ordering of unnecessarily large doses. I have known people to take twenty grains when ten would suffice, or thirty when twenty would have been amply sufficient. The result is headache the next day and drowsiness. It is to be remembered that it has a depressing effect on the respiration and heart action, and therefore too large doses may be dangerous. It has one great advantage over sulphonal or paraldehyde in its greater rapidity of action, which enables us to give it in the middle of the night. Many patients sleep when they first go to bed, waking in two or three hours; a dose of chloral will send them to sleep again after they have got what natural sleep they could. Chloral may be combined with bromide in some cases and with opium in others. Both are excellent combinations, the first being suitable for the excited and the second for the melancholic. It is efficacious in epilepsy, especially in the *status epilepticus*, when it must be administered by enema. Here, however, an inhalation of chloroform produces a quicker result.

Chloralamide.—This drug has its warm supporters and is said to be less dangerous than chloral, as it does not depress the respiration or circulation or lower the temperature; moreover it does not interfere with digestion. Collapse symptoms, however, have been observed and attributed to it, probably after a large dose. Its action is less rapid than that of chloral, though quicker than that of sulphonal, and it is not accompanied or followed by depression, giddiness, or motor incoördination. It is decomposed in hot water and by alkalies, the best vehicle for administration being a weak alcoholic solution. I have had considerable experience of this drug latterly and have been quite satisfied with its action.

Sulphonal.—Of the modern drugs none has been used so exten-

sively both by the profession and the public as sulphonal. I have used it very often and am disposed to think it a valuable medicine, with some, but not many, drawbacks. One of the latter is its insolubility in cold water. It is tasteless, and so can readily be mixed with any white food, as porridge or milk puddings; but it is not always easy to get food taken at odd times. It can be given in hot milk or water, or suspended by means of mucilage. Tabloids are another mode of administration, but as they generally contain only five grains, the patient has to take a number before he arrives at a full dose, and there is always the risk of his spitting them, or some of them, out instead of swallowing them. Its action is slow, slower than chloral, and therefore it should be given early, an hour and a half or two hours before bedtime. Another drawback is that if the drug is pressed or large doses are given; it produces giddiness and staggering gait, and weakness generally of the lower extremities very like the condition of a drunken man. To complete the similarity, there may also be difficulty of speech. All this proceeds from the administration of too large doses. I have given doses of twenty grains nightly to a general paralytic for years without any such effect. When doses of forty or fifty grains are given, such results may be expected. It is said that if this drug is given in combination with a tonic these symptoms do not appear; but large doses are not required continuously, and the effect is produced not by a single large dose, but by an accumulation from large doses repeated frequently. One great advantage which it possesses is that the sedative effect is continued to some extent throughout the day and even through the next night, so that is is often possible to give it with good effect on alternate nights only. Patients under its influence sleep soundly in the majority of cases and do not wake in a state of great excitement as they frequently do after chloral. Many cases have now been recorded of a peculiar appearance in the urine of those who have taken sulphonal for some time. It acquires a deep Burgundy-red color due to the presence of hæmatoporphyrin. It is not due to blood and contains no albumin, but the spectroscope renders its identification easy. In the case of a young woman in whom it appeared, other symptoms of failure of health had been observed. These together with the color in the urine entirely vanished when the drug was discontinued. When this medicine is taken for any length of time the urine should be carefully watched.

Paraldehyde.—This is a drug which has been received with great and deserved favor and largely prescribed. Chemically, it is closely allied to alcohol, and it shows its relation by its action, affecting first the brain, then the cord, then the medulla oblongata. If it is harm-

ful, it is because it has a tendency to paralyze the respiratory centre, and we are told that in dyspnœal states with dilated heart it must be used with much care. With this exception it is a very safe medicine, and I have given it for long periods without any drawback, even to elderly people. The sleep procured by it appears to be peculiarly quiet and refreshing and the waking unattended by excitement. The chief objection on the part of patients is the smell and taste, but I have not had it rejected by more than a few, and some, especially women, after a time rather like it. It imparts a disagreeable odor to the breath, which is easily perceived by those in the same room. It is said that this can be obviated by the dose being swallowed through a tube. I have found that the best way of giving it is in almond emulsion or in orange wine, and the latter is easier to keep, and as a rule is preferred. In the treatment of insanity the dose should be at least a drachm, and this may be increased without fear to two drachms. Dr. Clouston advances the dose to three or four drachms, and has given four drachms for a fortnight to a general paralytic. It has been objected that the prolonged use of large doses produces a state resembling chronic alcoholism, but I have had no experiences of this kind.

There are some other substances which are used to some extent, but not so frequently as the foregoing, one of these is *tetronal*, a body closely allied to sulphonal, but with two molecules of ethyl instead of two of methyl. Its effect is much the same as that of sulphonal.

Trional is another of the series, and has been more used. It is more soluble than sulphonal, and is said to be very useful in mania with excitement, but harmful in melancholia and hypochondriasis. A dose of fifteen grains is sufficient, at any rate to begin with.

Hyoscine.—We now come to two very powerful drugs which are almost always given hypodermically, and as we are directed to begin with gr. $\frac{1}{100}$, it is certain that caution must be observed in the administration. Hyoscyamus is a very old remedy in insanity, and the tincture given in sufficient quantity or in combination is decidedly useful; but the alkaloid hyoscine, for hyoscyamine is now rarely used, is a medicine of great power and much care is required. Given by the mouth, it seems to have little effect. Given by hypodermic injection it acts by producing a loss of power in the limbs and a condition of stupor rather than sleep. Many patients have a great horror of the feeling and dread the repetition. In a discussion at a meeting of the Medico-Psychological Association in 1891 great difference of opinion as to the benefit was manifested. Dr. Savage narrated the case of a woman who died after a dose of gr. $\frac{1}{200}$. It should be given

only to those who are in good bodily health and suffering from recent mania, not to those worn out by long-continued struggling and sleeplessness. It is more suitable for patients in an institution, where there is always a medical officer to watch the effect, than in private practice.

Duboisine.—The same may be said of this drug, which is given in the same way in doses of gr. $\frac{1}{150}$ to gr. $\frac{1}{75}$. It is recommended to be given in epilepsy, in periodical insanity, and acute mania. It lessens excitement and produces sleep, but large doses cause a drunken condition, giddiness, vomiting, tonic and clonic convulsions, hallucinations, and delirium.

Opium.—There is great difference of opinion as regards the use of this medicine in insanity, a difference arising probably from the variety of the preparations used. I have seen too many cases of melancholia cured by means of opium to have any doubt of its efficacy in this disorder; but it is, in my opinion, just as harmful in the excitement of mania or general paralysis. In melancholia it not only procures sleep but acts also as a nerve tonic, and allays the terrible feeling of depression which the melancholic experience, especially on first waking in the early morning. But it is to be remembered that opium in any preparation is not suited to every person, sane or insane. If we were to take the first hundred persons we meet and give each a full dose of opium at bedtime, the effect in a large number of cases would be not the production, but the prevention of sleep. We have to ascertain by trial whether its administration is beneficial or not. I have found solutions of opium preferable to the alkaloid morphine. The latter, whether given by the mouth or hypodermically, is apt to cause sickness and constipation, serious evils when we have to deal with refusal of food. Solutions of opium have not this effect to anything like the same extent. Hypodermic injections should be avoided if possible, for they often give rise to delusions which have their origin in this mode of administration. Whether we give opium or morphine, the quantity is small and can easily be mixed with food or drink.

Forcible Feeding.—In many cases it is of the utmost importance to administer food and a plentiful supply thereof, for it often happens that a patient has been allowed to go without any worth speaking of for days, and great exhaustion is the result. For one reason or other a great number refuse food; some think it poisoned, many think it is wicked to take it, or that others want it more, or that their inside is blocked up so that nothing will pass through them. And the degree of resistance they will offer will vary from a mere protest, which does not prevent their being fed, the food being carried to the mouth by a spoon, up to a desperate resistance by which the patient, per-

haps a powerful man, will struggle with all his might to avoid taking the nourishment we wish to give him. Such a one is not in a state of extreme exhaustion, but when this is the case, food must be administered at once, and we must decide what method of feeding is to be adopted. There is the old plan of forcing the mouth open by a spoon or stick and pouring liquid food down, the nostrils being closed at the same time. The objection to this is the length of time it takes. If we are dealing with a patient who is weak and prostrate and the struggle in feeding lasts half an hour, the patient loses as much by the fatigue as he gains by the food. But when there is no exhaustion and the food is refused to give trouble and necessitate frequent visits of a medical man, it is as well sometimes to cause the feeding to be done in this way by the attendants, and the refusal often comes to an end through dislike to the mode of administration.

There remain two methods of forcible feeding, one by the nose and the other by the mouth. Each has its advocates, and there are certain variations in the way each is performed. In feeding by the nose some use a funnel placed in one nostril, others a short india-rubber tube affixed to a feeding-bottle, others a long tube which will reach the stomach through the nostril. The objection to either of the two last is that a resisting patient is very apt to get the tube between his teeth; we have very little command over the end of it when it enters the fauces, and being small it may easily be sucked into the larynx. For this method it is better to place the patient lying down on a bed or sofa.

There are not a few, however, who cannot be fed by the nose, being too violent and resisting too strongly. They must be fed by a stomach tube passed through the mouth. Some feed their patients lying down. I myself think this a most awkward plan, as the operator has to lean over the man in a most uncomfortable way in the midst of the attendants who are holding him kicking and struggling. He must be rendered motionless, which cannot be done by a number of attendants grasping him. He should be placed in a strong arm-chair, and his body, arms and legs swathed in sheets, which can be drawn round the arms and legs of the chair till he is rendered incapable of motion. By this means all sudden movements and consequent accidents are prevented; he cannot struggle, therefore there is no exhaustion and no bruising. A man held two or three times a day by attendants will very soon be a mass of bruises, and we know what the friends are apt to say about such an appearance. The teeth are to be gradually opened by a screw-wedge or gag which should be applied in the median line, not at the side, as there is greater power of resistance in the latter. When the teeth are sufficiently separated,

a hard-wood gag is inserted and held by an attendant standing behind the chair, and through it the tube is passed. This should be of a size that will not enter the glottis, and whether it be made of gum or of red rubber it must be flexible to the end. When passed through the hole in the gag we incline it to our right, having previously well oiled it. No force is required; if it is held by the tongue we wait till the patient is obliged to take breath, and the hold is released, and the tube slides within the action of the muscles and being swallowed, so reaches the stomach. The instrument we employ may be the stomach-pump, a rubber bottle, or a funnel into which the food is poured. The advantage of the first is that with a large tube and large pump the food need not be mere liquid, such as will run from a funnel, but may consist of finely pounded meat and soup mixed with potato, or a thick custard of milk and eggs. Also we can better regulate the speed with which it is introduced into the stomach than when it is poured in large quantity through a funnel. I have rarely known a patient sick after being fed by the first method, and in this respect again I believe the sitting posture to be greatly superior to the recumbent.

The Weighing Chair.—Mention of this may fitly follow what has been said concerning forced feeding. Of the vast importance of an adequate supply of food in the treatment of insanity there can be no doubt, and our test of this supply and of its efficient action is to weigh the patient. Almost all, if the mental disorder has been other than of very brief duration, will have lost weight, some melancholics to a large extent, and the weighing machine will tell us whether our treatment is producing the effect we desire, and whether the food needs to be increased, for no melancholic person who is much emaciated will recover his mental health and yet remain in the same emaciated state. It will also tell us if a patient who is taking, as we suppose, an adequate amount of food every day and sleeping fairly well, still continues to lose weight, the cause whereof we must investigate. We may find that the food has not been taken, but when the attendant was not looking, it has been secreted or thrown away; many are cunning enough to do this. There may be some disease of another organ, but the patient will say nothing about it, for many will not complain even if they are suffering pain. Also the thinning may be due to masturbation, which is often the cause, there being nothing else to account for it. It seems to occur periodically in some demented patients, during which time they lose flesh rapidly. Great vigilance is necessary both by day and night to prevent this practice.

Ophthalmoscope.—This instrument has now been in use for a considerable number of years and many observations have been recorded.

I do not find, however, that any very definite results have been obtained. It is found, as might be expected, that the greatest changes occur in the later stages of general paralysis and in syphilitic patients. But Dr. Savage tells us that "in the early stages of general paralysis, whatever the variety, there is no constant change in the discs. There is no hyperæmia, no grey degeneration, nor any alteration either in vessels or nervous tissues. Later, and more generally, changes begin to show themselves towards the end of the second stage, and although it is uncommon to find any really distinct optic neuritis, changes associated with dimness of outline of the disc and with fulness of vessels become manifest" (*op. cit.*, p. 328). The changes in the other forms of insanity are just what we should expect to find. In mania, abnormally red or congested discs; in melancholia, an anæmic condition, not amounting however to anæmic neuritis. In epileptic insanity or in syphilitic, the appearances noted in the eye depend upon intracranial lesions, and in patients affected by chronic alcoholism or other poisons such as tobacco the same atrophic changes may be noted whether there is insanity or not.

Electricity.—That nervous disorder can be cured by galvanism or electricity is a very old theory which dates back to the commencement of the century. Since then it has been in and out of fashion, and much discredit has been thrown upon it by indiscriminate quackery. Much must depend on whether the patient is treated by the constant or the induced currents, the latter acting as a stimulant and being of use in cases of primary dementia or stuporous melancholia, the former being rather of the nature of a sedative and beneficial when there is excitability. I have found much difficulty in the application on account of the dislike which patients have to it. They are apt to look upon it as a punishment if we insist on the operation, and found thereon all manner of delusions of persecution and torture, electricity being a common form of such delusion.

Thyroid Feeding.—The treatment by means of thyroid extract which has been so successful in cases of myxœdema has lately been extended to insanity, and some remarkable results have been recorded, chiefly by Dr. Lewis Bruce.[71] Knowing the improvement often witnessed in patients after febrile attacks, carbuncles, and the exanthemata, he aimed at inducing fever with its resulting reaction. The patients were weighed, put to bed, and pulse, temperature, and urine carefully noted for three or four days. Thyroid tabloids were then administered thrice daily, either with the ordinary meal or immediately after, the quantity being from thirty to sixty grains per day. The drug was given till a feverish condition was induced for two or three days; when the pulse became rapid, soft, and compressible, the

limit of safety was considered to be attained, the treatment was stopped, the patient remained in bed for several days and was then again weighed and afterwards treated by a tonic and extra diet. Most gratifying results followed the treatment in various cases in which patients threatened to pass into confirmed dementia or had remained stuporous for long periods. Dr. Bruce propounds the following questions as to the way in which the beneficial effect is produced: 1. Is the action due to the febrile process induced by the thyroid, and the subsequent reaction to the fever? 2. Is the thyroid extract a direct brain stimulant? 3. Does the ingested thyroid supply some material to the body which the gland is supplying in deficient quantity? He is of opinion that the febrile condition has all the appearance of being induced by a toxin introduced into the blood through the medium of the mucous membrane of the stomach. With regard to the second question he considers the thyroid to be a direct brain stimulant. Various patients from being quiet and demented became lively, elated, and maniacal, some relapsing into their former condition when the treatment ceased. This is what is frequently seen when some intercurrent febrile attack occurs in chronic demented patients. With regard to question three, he thinks there is a strong probability that at some periods of life the administration of thyroid supplies some substance necessary to the bodily economy.

Hypnotism.—Although hypnotism has been investigated by many during a long period of time and invested with great interest as a psychological study, its therapeutical value has been but little tested. In the *Journal of Mental Science* (January, 1893), Dr. George M. Robertson gives an account of various patients hypnotized by him at Morningside Asylum. One, a woman suffering from melancholia at the time of the climacteric, improved greatly under the treatment, and her recovery was in Dr. Robertson's opinion materially aided by it. It was useful in the case of epileptics in their intervals of comparative sanity, dispelling the headache and confusion they felt at such times. Excited patients were often sent to sleep by this process and awoke quieter even though no permanent good resulted; in the excitement of puerperal and epileptic mania it was also useful. Dr. Robertson summarizes its use among the insane as follows: (1) In insomnia; (2) as a sedative in excitement; (3) to dispel fleeting delusional states; (4) To overcome the morbid resistance of patients; (5) as a substitute for restraint.

Hypnotism has also been tried at Bethlem Hospital, but without much success. Dr. Hyslop tells us[22] that "Drs. Percy Smith and A. T. Myers found that of twenty-one cases in which it was tried, only two were certainly hypnotized. In one case the suggestions made

were not acted upon, and in the other, although suggestions seemed at first to be in a very small degree successful, the effect, instead of increasing, diminished rather rapidly. When any improvement was noticeable in the other cases, the results gained were attributable more to the large amount of personal attention devoted to each case than to any hypnotic influence."

The insane are not so susceptible to hypnotic influence as the hysterical. Hypnotism springs up, said Charcot, on hysteric soil. But in my opinion the hysterical are the persons on whom it ought not to be practised.

THE PREVENTION OF INSANITY.

The prevention of insanity is of far higher consequence than the cure, and it is a matter which concerns every medical man, whereas the treatment of the insane concerns only a few; the prevention, indeed, concerns not only every medical man but every member of the community. In an ideal society no insanity should exist, any more than it does in the simple society of the untutored savage; but in our day, when men live not for the good of the community, but for themselves and their own pleasure and gain, we are very far from arriving at such an existence.

In the ideal community, how would insanity be prevented? The first precaution, no doubt, would be the forbidding the marriage of unsuitable persons. If men and women were race-horses or shorthorns their breeding would be studied most elaborately, all imperfect or faulty stock would be carefully eliminated, and everything like inbreeding would, as a matter of course, be avoided. But, being what we are, thinking only of ourselves and our own gratification and nothing of the future race, we arrange our own unions, and nobody has the right or power or courage to prevent us when we arrive at that period of great discretion, the statutory age of twenty-one. So far from the community trying to improve the race by selecting the strong and rejecting the weakly, it does everything in its power to hide the latter and stifle all inquiry concerning their weakness. Parents will conceal the existence of hereditary insanity not only from the medical adviser but from the children themselves, and rather than expose or confess it, will subject them to infinite risks not only as regards marrying but in the general environment. Men and women who have been insane already, perhaps more than once, will contract marriage, and will not only not tell the other party of the fact of their having been insane, but will deny it stoutly when the question is asked. And when such women marry and have a child and break down again in

another attack of insanity, they will continue to bear children till they have a large family, and possibly a fresh attack of mania after every one. Many have hoped that some day legislation may concern itself with this subject, and prevent the union of persons one of whom has been insane or is specially threatened with the disorder. Our legislators, however, are far too busy with matters of less importance. We can only trust that by education, by continual ventilation of the subject, and exposure of the evils arising from its neglect, public opinion may in time be directed towards it so that people will be forced to look upon the act of giving birth to an insane child as a cruel sin. Such people probably flatter themselves that their children will not be insane because they may be acquainted with other families who have escaped, or they know familes in which one or more members have shown symptoms of the disorder and yet a larger number have escaped. But it is certain that every child whether it becomes insane or not, carries about with it through life a *tendency* to insanity, and there can hardly be a more terrible heritage. And it must not be forgotten that insanity is not the only result of an inherited predisposition; there is a long series of neuroses which may be developed in the children of insane parents, such as epilepsy, dipsomania, neuralgia, idiocy, and the like. People boast that there is no insanity when nearly all their offspring are the victims of one or other of these maladies.

For the prevention of insanity we would, if we could, forbid the marrying of unsuitable persons, persons who by reason of inheritance, or being themselves neurotic, unhealthy, or inebriate are likely to have diseased children. If there is insanity in the family we shall have to consider in how many members and how many generations it has shown itself. If it has occurred in one of the parents, what was the age of the parent at the time of its appearance? Did it appear when the parent was young, at a time when obviously it must have been inherited, or did it manifest itself later in life with a cause and a history which showed it to have been acquired? What was the age of the parent when the child was born, and was it born before or after the disorder commenced in its parent? If the taint appears to be slight and the individual is strong and healthy and free from all neurotic symptoms, we then have to look at the other side of the union, at the partner that he or she is about to take. If this one's family history is absolutely free from inherited disease, and the individual is sound in body, no great opposition can be offered if he or she is willing to take the risk, but that there is a risk ought to be clearly explained. On the other hand, if there is a taint of insanity on this side also, if the parties are cousins, or either is eccentric,

nervous, hypochondriacal, weak-minded, ultra-religious, or ultra-emotional, the union should be forbidden, not only on account of the offspring, but for the sake of the parties themselves. The effect of the knowledge of this family disorder may have a disastrous influence on their lives and cause the greatest misinterpretation of actions and trial of tempers.

Whatever difficulty we experience in advising as to the marriage of those in whose families insanity exists, there will be much less when we are consulted about men or women who have already had an attack of the disorder. When the individual is a girl, we are at once confronted with the popular and prevalent idea that marriage is a cure and sovereign remedy for such disturbance, and advisers, even medical, say to the parents, "Get her married," for they think that matrimony will cure all remnants of the past attack and be a certain preventive of any in the future. Our advice on this subject will be often taken and but rarely followed. The attack will be concealed from the knowledge of the other party, if possible, or will be minimized and spoken of as having been only nervousness or hysteria. In my opinion people who have been insane ought not to marry at all, or inflict on their partner for life the anxiety and danger of another attack. No one who has had one attack of insanity can be pronounced free from the risk of another, for it is a disease which confers no immunity in the future on its victims, like some others we have to treat. On the contrary, each attack, if there be more than one, adds to and does not take away the liability to others, in this respect following the example of its congeners, epilepsy and neuralgia. And besides the risk and danger to the partner in the marriage there is the question of offspring. In this there is far greater danger for the woman than the man, for the former has to face the periods of pregnancy, parturition, and possibly lactation. Numbers we see breaking down after childbearing who, had they remained single, might have led a happy and useful life.

People with an inherited taint are continually marrying without advice, very often in spite of it, and when married, insanity is developed; they break down, recover perhaps, and break down again. The wife may have puerperal mania after one or more of her confinements, the husband may show symptoms of the disorder at an early period. Now, holding the opinion that I do very strongly as to the necessity of preventing the inheritance of insanity, I must say that in my judgment persons who have had an attack of the malady ought to have no more children. What can be more lamentable than to see a woman break down in childbed, recover, break down again with the next child, and so on with six, seven, or eight children, the recovery

between each being less and less, till she becomes a chronic maniac? For the sake of the mother and father, to say nothing of the children, there ought to be an end of the begetting when insanity follows the birth. The same observation applies to fathers who have had attacks of insanity. There is not the same personal risk to the father that there is to the mother, the risk of dying in an acute attack of puerperal insanity or of becoming through such an attack permanently insane; but there is the same risk for the children, the same chance of bringing into the world a progeny which shall hand down this heritage of insanity and all the other varieties of neurotic disease.

People, however predisposed, will marry, and very often marry cousins and others perilously like themselves. The result is a neurotic offspring, the bringing up of whom the medical attendant has to superintend as best he can. What is he to observe and what precautions can be taken? From the earliest age he may note symptoms which should put him on his guard. The infant may sleep badly, may be cross or overexcitable, or have infantile convulsions. If the insanity is on the mother's side, the child should not be suckled by her, for if she is a nervous and emotional person, prone to varying mental moods, she is not likely to be a good nurse, and it is of the utmost importance that a predisposed child should be thoroughly well nourished either by a good wet-nurse or by hand-feeding. Nourishment is most essential, and such a child is favorably situated if it is fat, and badly off if thin. This will depend not only on food but also on sleep. Of this it cannot have too much, and it should be encouraged to sleep as much as possible and at regular hours so that the habit may be engendered and continued, for this sleeping—sleeping by day as well as by night—should be kept up for some years, till it is five or six years old or even more.

Children who have plenty of food and sleep are not likely to be troubled by fits or convulsions, but if any should take place they are of grave import, and the cause should be carefully looked for and the recurrence if possible averted. Some nervous children are troubled with nightmare or night horrors or a fear of being alone or in the dark. All such require to be treated with great care, with judicious firmness together with kindness as far removed from cross scolding as from silly spoiling and petting. Many a child is frightened and rendered nervous and timid for life by tales told by foolish servants and nurses of ghosts, spectres, or robbers, or threats of policemen or the like. The sensitive and imaginative brain of the child carries to bed with it these terrifying romances and wakes from its too vivid dreams in an agony of panic. Parents are often little aware of what goes on in the nursery behind their backs, and what harm their children are

deriving from those in whose charge they are placed. Another evil, it is to be feared, comes occasionally from nurses, who in order to make such children sleep teach them habits of self-abuse.

While they are thus exposed to risks from nurses and servants, they may receive no less harm from parents if the latter are peculiar or extreme in their views, violent in temper or capricious. They may spoil them at one time by indulgence in improper food and drink, at another may frighten them by their own quarrels and noise, or dose them with religion till the children either loathe the very name of it or become the veriest little hypocrites. Dr. Clouston tells us of a little boy aged four "who by dint of constant effort on the part of his mother was so sensitive as to right and wrong that he never ate an apple without first considering the ethics of the question whether he should eat it or not; who would suffer acute misery, cry most bitterly, and lose some of his sleep at night if he had shouted too loud at play or taken more than his share of the cake, he having been taught that these things were 'wrong' and 'displeasing to God.' But the usual anæsthesia that follows too keen feeling succeeded the precocious intensity in this child, for at ten he was the greatest imp I ever saw, and could not be made to see that smashing his mother's watch or throwing the cat out of the window, or taking what was not his own, was wrong at all." [13]

The egoistic nature of those who inherit the insane diathesis has been already mentioned. All children are prone to egoism but especially these, and it ought to be kept in view in the rearing thereof. There is much in home life to encourage this selfishness. If it be the first or an only child, possibly delicate, it may require much watching and care, and it will be easy to foster this selfishness, and much caution must be observed to avoid so doing. The child should be thrown among others as much as possible, should be taught to consider its playmates first and itself last, to be generous and share with the others its toys and luxuries. It should learn to be kind and considerate towards servants, and to be fond of and not cruel to dumb animals. Cruelty to the latter is a constant concomitant of a weak mind. Very soon in the life of the child will arise the question of education on which our advice may be asked, especially with regard to two kinds of children, the backward and the precocious. The first may be not an idiot or imbecile but backward, slowly developing, slow to grasp that which he is taught, but often retaining it with great tenacity. Such a boy or girl requires special tuition. It is useless to place them in a class of others whom they resemble only in age, and expect them to do the same lessons and compete on perfectly equal terms. Still worse is it to

punish an unfortunate child of this kind for not learning his lessons, to set him down as lazy or idle, and to think that it is only obstinacy, the remedy for which is the cane. Incalculable harm may be done to a boy or girl by such a mistake. Special education and special teachers are required, and the latter must be persons who will not lose their temper but will with infinite patience bring forward what talent may lurk in the backward mind, and make the lessons a pleasure instead of a hated penance.

Many backward children have a special aptitude for some one pursuit, as music, drawing, carpentering, or even mathematics or mechanical engineering, and it is the teacher's business to discover this and develop it by every available means. On the other hand there is the precocious child, bright, quick and intelligent, apt to learn, the pride of his teachers. This precocity is often born of a neurotic stock, just as is the backwardness of the last mentioned, and it demands as much care. Teachers, especially in schools, are apt to press a child of this kind unduly; in the competition for places and prizes at school a boy or girl, even without pressure from masters or mistresses, may overwork its brain cells, and from being a genius at ten may become a dolt at twenty. Teachers have to watch closely over the health of such children and take care that they have sufficient and eat sufficient plain and wholesome food, that they sleep in a well ventilated and healthy bedroom, and that they take abundant exercise in the open air. There has been a good deal of controversy in England as to the propriety of making boys join in games in the playground, and not allowing them to "loaf" in their rooms or in the streets of a town. Whatever may be said of this compulsory play as a general rule, there are beyond question many of these peculiar, shy, and nervous children who would never play unless compelled, but would spend their time indoors to the detriment of their health, or among objectionable companions in taverns or the like. I have met within asylum walls in after-life more than one whom I recollect at school as loafing and idling in this manner, not stupid or neglecting his lessons but avoiding the playground and games, taking no exercise, and remarkable for some habit or peculiarity of appearance.

Are girls to be sent to school? Much will depend on the character of the home life and the judicious or injudicious management of the parents. School may be the salvation of some girls by taking them away from uncomfortable homes or foolish spoiling or petting, and subjecting them to the rules, discipline, and public opinion of a number instead of the self-indulgence of home life, the caprices of an hysterical, violent, and indiscreet mother, or the austerities of an

ultra-religious father. In the case of the majority of girls whose homes are bright and happy, it is better for them to be day-scholars rather than boarders. In a large day-school, such as we now have in most towns, there is an approximation to the broad views and high tone of our public schools for boys, and at the same time the girls enjoy the advantages of home life and of watchful care of health. For the period of school time is one of greater peril to a girl than a boy, inasmuch as during this she passes through the stage of puberty; the first appearance of the catamenia is fraught with considerable peril to a good many sensitive and nervous girls, and they should be sedulously guarded during it. They should not be allowed to over-fatigue themselves with tennis, long walks, or rides. They should not be exposed to great heat or cold, or anything which will check the menstrual flow or render it too profuse. They should not overtax the brain with studies for competitive examinations, and a strict watch must be kept upon their sleeping, as an inability to sleep in young people of such an age is often a warning and forerunner of coming mischief, and if a girl sleeps alone it may easily be overlooked. This time of life is one of greater danger to girls than to boys, to whom it makes comparatively little difference and who break down at the age of adolescence rather than that of puberty. A boy of twelve develops slowly and gradually, and is not a fully perfected man till he is twenty-five. But a girl of seventeen or eighteen is far nearer to a fully developed woman if we compare her with one of twelve, and as her time of development is crowded, so to speak, into a narrower space, so is it fraught with greater peril.

There is a matter of great importance in the life of boys and girls which cannot be passed over without notice. It is the subject of self-abuse. It is a habit learned in a very large number of cases at an early age; it may even, as I have said, be taught by nurses, but it is more likely to be derived from another schoolfellow, and this at a time when neither is old enough to know that it is likely to grow into a habit or be productive of evil, though they may be conscious that it is a practice which must be concealed as indecent and unclean. I am aware that there is great exaggeration as to the consequences and much nonsense talked with regard to the habit. Parents who wish to conceal the insanity which exists in their families are ever ready to assign self-abuse as the cause of an attack in one of their children, if it can be shown that the patient has ever indulged in the vice, no matter how rarely. Young men, too, when they hear, perhaps for the first time, that the practice is hurtful, become alarmed, and if by ill-luck they happen to come upon any of the literature disseminated by the vile tribe of quacks who prey upon the nervous and frighten

them with such hobgoblins as impotence or spermatorrhœa, the result may be very disastrous. The neurotic are those most likely to suffer from the habit and most prone to indulge to excess, and in some it may be the actual cause of insanity. It is almost certain that a boy will hear of it at school, and in my opinion it is not wise to allow him to run the risk of contracting the habit without having the slightest idea that it is harmful to health. It is better that he should be warned by a father, guardian, elder brother, or family doctor that he must on no account indulge in this vice than that he should take his chance of refraining therefrom. At a recent meeting of the British Medical Association (Bristol, 1894) there was a discussion on the subject of warning, and opinions were given for and against it. Since that date my own view has been confirmed by the headmaster of one of our chief public schools, who has requested the parents of the boys to take care that their sons are warned against the practice. The habit, if already contracted, should be strenuously resisted, and hard exercise, plain living, and the absence of stimulating food and drink and of improper literature should be carefully enforced. With girls it is different, and I do not think that there is any need to warn them; their chance of being taught the habit is far less, especially if during their education they live at home, and this is a strong argument in favor of the latter system. If they must go to a boarding-school the greatest care must be exercised in the selection, and that one must be chosen where such things do not exist. It has happened that girls have found out the practice for themselves, as they have told me, but I believe this to be rare, and no one would bring it to the knowledge of girls in general, because here and there one has made such a discovery. Such knowledge would in truth be a dangerous thing.

Looking at the history of so many of these predisposed persons and at the part which drink plays in filling our asylums, it surely is not too much to advise that all such should totally abstain from alcoholic liquors. Especially should those who are the children of intemperate parents, but this is not likely to be inculcated by the latter. Happy are the children who are not in their hands. I lately saw a young man aged twenty-four who was just emerging from an attack of delirium tremens, one of many from which he had suffered. He began to drink hard at the age of fifteen; his father and mother both drank themselves to death, and the son was following their example, and in England we have at present no law to prevent it. It is far easier to keep young men and women from beginning to take alcohol than to break off a habit once formed. They are not likely to indulge in other stimulants as opium, coca, or hascheesh, but a liking for wine or spirits may be contracted at an early age; the liking may grow into

a craving, and how hard this is to resist or overcome every medical man knows full well. Girls at the present time in great numbers are accustomed to do without beer or wine and in no way suffer from the deprivation; on the contrary, with plenty of food and exercise they have grown and attained a stature and muscular development which is very striking. With young men it is not so common, yet a considerable number abstain, and if the habit is commenced at an early age the difficulty vanishes. In fact, it is certain that apart from the question of drinking to excess, many of these neurotic persons suffer from various kinds of nervous dyspepsia, which are aggravated by alcohol and cannot be cured unless it is abandoned. If left to themselves they will probably fly to brandy to relieve dyspeptic pain and spasm, and instead of curing will increase their sufferings and so drift into the practice of constant stimulation. It is also important that in the choice of a calling for neurotic young men none should be chosen which entails a constant tasting of wine or spirits, or the entertaining and drinking with others such as is inseparable from some walks of life.

Equally important is it that the feeding as well as the drinking of the predisposed should be carefully watched. Stimulants in the shape of alcohol they do not require, but an abundance of plain, wholesome food is absolutely necessary, and many break down for want of it. It constantly happens that from hypochondrical notions about dyspepsia, from fancies of various kinds on the part of the parents or themselves as to what is or is not wholesome or what agrees or disagrees with them, or a fear which girls have of getting fat, a small and inadequate amount of food is taken, and certain important items are omitted. One cannot take bread, another milk or eggs, another potatoes or vegetables. So the diet list is reduced till little remains and that innutritious or indigestible. If this occurs in men who at the same time are hard worked in brain, a breakdown is very likely to follow, and it is often most difficult to induce them to take the amount of food which is essential for recovery. Another class thinks it carnal and sensual to indulge the appetite and eat one's fill, and endless evil comes to many who fast during Lent and other such seasons, and mortify the flesh according to the doctrines of an ultra-ritualistic party. Not unfrequently I have seen men and women who get up early in the morning to attend a celebration of the communion. This they feel themselves called upon to do fasting, and they rise and go out in all weathers and into a cold church without taking any food. The whole of the religious training of the predisposed requires the greatest care and judicious handling, and it is rendered difficult by the fact that such people are averse to consult those who can best advise them, and seek excitement and extreme views, ranging from re-

vivals up to the ritual of the Roman Catholic Church. Young people of either sex should not be allowed to spend an undue time in reading religious books, in private meditation, or in writing long accounts of their spiritual experiences. Their religion should be practical and not introspective, and they should not spend half the night on their knees, exposing themselves to cold.

The time has now arrived after boyhood and education are passed, when a young man has to choose a profession or occupation, and if he goes to college he will adapt his studies more or less to that which is before him. Be it remembered that the persons under consideration are the predisposed, those who inherit insanity or some other allied neurosis. We have not to do with men and women in general. The ideal life for any one predisposed is a home in a healthy locality free from overwork, over-anxiety, or worry, with sufficient means and few children, with everything, in short, that will repress the hereditary tendency and nothing that will excite it. But neither the young man himself nor his parents may aspire to such a life, but on the contrary desire something very different, and with the egotistic self-assurance that characterizes so many people of this temperament, he chooses some calling for which he has not the requisite ability, patience, or capacity, and failure and disappointment is the result.

What should influence the selection of a profession? Of the so-called learned professions the church is the least eligible; it appeals strongly to the emotional part of the mental constitution, the part which in neurotic people is apt to be easily and strongly aroused and least under control. Religious doubts and difficulties concerning creeds will probably arise in these excitable minds, questions as to whether they are fit and worthy to hold their benefices, or whether they shall resign them, and by so doing reduce themselves and their families to poverty. Fear may arise, in a vacillating and doubting mind, as to whether the duties of such a calling are properly discharged, and after the slightest depression there may be overwhelming religious remorse and probably suicidal attempts. Moreover, this profession once adopted cannot easily be thrown up or changed for another, so that it is by no means a desirable vocation for those whom we are considering. For the last reason law and medicine are preferable; the study of them, especially the latter, has great and practical interest for one who likes it, an interest which cannot flag, as new discoveries in science and new methods of alleviating disease are made and published. There will, of course, be anxieties in both professions. Lawsuits may be harassing and disappointing, and patients will die in spite of our efforts; at times business will be slack

and fees scarce, yet in the calling of a lawyer or a medical practitioner there is usually a livelihood to be earned, and a certain amount of routine and unexciting work to be done without much worry. Obviously it is not good for a nervous man to be engaged in commercial undertakings or speculations which entail great anxiety and are subject to wide fluctuations. Such a life requires strong nerves and a cool head, and those succeed who have these requisites, and those who have not are lost in the race. Nervous people are subject to alternating moods of depression and exaltation. In the latter they are prone to launch out into speculations and enterprises which more sober people would reject, and when this stage has passed and depression has succeeded, they will sell what they have got for less than its value and are at the mercy of those who work upon their fears. For such people some post is to be sought where there is regular work to be done without great responsibility, where the hours are short and holidays long, and where there is a fixed salary not likely to fail or to cause anxiety as to its continuance. Locality is of importance, for the extreme neither of heat nor of cold is good for such, yet even in the tropics there are healthy and unhealthy places, and the selection must be made with care. Moreover, it is not good for such an individual to be alone, as some are while tending cattle or sheep with no one to speak to, perhaps for weeks, but natives. I have known several break down in these circumstances.

When they have chosen a profession, or haply before, these predisposed young persons bethink them they must marry, and may become engaged before they have consulted either their parents or medical adviser. They become engaged first and ask advice afterwards, and the advice offered, if it is contrary to their wishes, is seldom followed. If we note the number of young men and women who break down mentally during the time of an engagement, immediately after marriage, or during the honeymoon, it is certain that all are fraught with danger to those predisposed to insanity by constitution and inheritance. That all persons who have had insanity in their families should abstain from matrimony is more than can be expected. Not only do these marry, but they are specially prone to make ill-judged selections. There seems a tendency among these neurotic folk to choose for their partners people of a like nervous temperament, and from a shyness which is characteristic and constitutional they often choose cousins whom they have long known in preference to strangers whom they know not and are too shy to approach. Needless to say the danger is increased if cousins from two families in which insanity exists intermarry and have children. This, however, happens but too frequently, and parents do not oppose such unions, because they

prefer to ignore the whole risk. They hope for the best or deny that the malady has ever existed, or invent excuses for the cases that have occurred, attributing them to sunstroke, to falls on the head, or to drink. If a member of such a family is to marry, it is important that he or she should be in good health, and marry one who is also in good health and has a good family record. If a girl is delicate and neurotic, she should not marry a very poor man and have the additional anxiety of poverty and the constant and daily obligation to deny herself and pinch and save for the sake of husband and children. The continual worry of small economies and the necessity of meeting small debts may break down one who in more affluent circumstances might have gone unscathed.

Another fertile source of insanity in women is continual childbearing, one child following another in rapid succession. Many delicate women having no break or respite succumb to this strain, even those in whom insanity may not be markedly hereditary. The nervous system has no rest or chance of recuperation, and mental or lung disease, or both, is the result. I have not found that mere hysteria in a girl is followed by insanity after marriage, but here everything will depend on what is meant by hysteria, which is a name often applied to very pronounced and unmistakable mania. Many men predisposed to insanity may benefit greatly by marriage if they are so fortunate as to meet with a suitable wife. They may henceforth lead a more healthy and regular life, keep earlier hours, get more sleep, and have a confidante to share their troubles, to care for their meals and domestic comforts, and nurse and guard them. If on the other hand, marriage does not prove a benefit, or they are unfitted for it, it is a condition from which the unfortunate wife cannot free herself. An irritable or jealous man will quarrel more with his wife and behave worse to her than to any other being, and there is also the risk that the offspring may be idiotic, epileptic, dipsomaniac, or neurotic in some shape or way. The benefit to be derived from marriage by a predisposed woman is far less and the danger far greater. There is the marriage itself with all its trying surroundings in which so many break down. Then follow pregnancy and parturition, to recur, it may be, frequently. Even if there is immunity on the first or second occasion, insanity may be developed later on. Of one thing I am persuaded and I repeat it here. Persons, especially women, who have already had an attack of insanity ought to abstain from marriage, and the concealment of such a history from the other side is a most serious and reprehensible step. Also a woman who has had an attack of insanity after more than one confinement ought to have no more children.

To promote an interest in something besides self it is necessary that these people should have an occupation or object to engage their thoughts and distract them from perpetual self-contemplation, or the promotion and aggrandizement of self. While some have too much work and mind-toil, others have too little, and lead an idle, aimless life which either tends to bad and solitary habits and perhaps to drink, or fosters a habit of continual self-introspection and perpetual complaint that they are misunderstood. Now these idle people require occupation and work for their minds, and this should be found for them in some form or other, though it may not be easy to lay down a scheme which is applicable to all. They may be independent and have no need to work for a living; this has been the curse of many young men, but such should be encouraged to take up some pursuit, to study some branch of science, to devote themselves to the practice of art, to travel in foreign countries and study the fauna or flora of distant lands. Every such pursuit is an assistance to the neurotic and predisposed individual, and great will be the benefit gained from it. Not only ought the idle to have such occupation, the busy and hard-worked man should have beyond his every-day task some amusement, pursuit, or hobby to which he can turn as a relief from his daily round of business and find therein a food and rest for his mind. Plato knew the value of this, which he called a parergon or by-work, and of great value it is. A man's daily task, whether successful or not, may be a very monotonous and routine money-making affair, which is not enough to occupy a healthy brain, but yet at times will be anxious and worrying. It is good for that man to leave his business behind him at his office and devote his energy to something else at home. If we look through the lists of our learned societies, we shall find that they are largely made up of men who belong to them for mental refreshment and recreation, who are not professional scientists, but busy men engaged in active daily work—city men, solicitors, clergy, medical men—who in such studies distract their minds from business and occupy their leisure with different thoughts and investigations. How often, on the other hand, do we find a man break down, and hear that apart from his business he has no thought, no occupation, no mental amusement. He goes to business early and returns late, and the morning and the evening newspapers are all that he reads from Monday morning to Saturday night.

Can anything be done by a man or woman who has had an attack of insanity to prevent a recurrence thereof? In some cases the cause of the first attack may be obvious, and it may be possible to avoid it in the future if the patient can be persuaded to give up such a cause as alcohol; the difficulty is to convince a man of the necessity of ab-

stinence. The same with puerperal insanity; if women continue to have children, they must expect other attacks. Those who have succumbed to the heat of tropical lands must not return thither; if they do, in all probability they will again break down. But a great many become insane not from an obvious and preventable cause, but from an inherited instability of constitution which has been upset by something, probably of a trivial character, and is liable to be again upset by anything of the like kind. And if there should be two or three such attacks, a habit of recurrence may be established and they will occur again and again without our being able to assign any exciting cause. These constitutionally frail people require to be shielded beyond any others, but their nervous condition renders them liable to the changes and chances of this life, and mere trifles are magnified into mountains by the nervous man or woman. Their insanity is said to be due to some worry or disappointment, but on inquiry we find that the worry or disappointment is entirely of their own fabrication, and has arisen in their own brain subjectively without any objective existence.

Can a man or a woman do anything to ward off an attack of insanity either in the near or remote future? Much might certainly be done if the matter were properly laid before those who inherit the constitutional predisposition, or have already had symptoms or threatenings of the disorder. But who is to do it? The parents or near relatives are unwilling, for by so doing they have to reveal or admit their own history; medical advisers may not be consulted, and cannot without some opportunity broach the subject. But indirectly something may be done. We know that it is the peculiarity of the insane temperament to be wrapped up in self, to be egotistic, displaying self-feeling and subject-consciousness in all the relations of life. An excess of this, a rise beyond the normal level, constitutes an insane man. It should be the aim of every one who has to do with these persons to foster and encourage the opposite and higher sentiments, the "altruistic" as they have been called, or to induce them in every way to think of others rather than themselves. This self-feeling may be displayed in many ways. In religion they may indicate their vanity and self-esteem; they "are not as other men are," or they fast and make long prayers for what they think they shall gain by it in another life. Others devote their whole energy to the gaining of wealth in order that they may exalt themselves beyond their fellows. They work very hard, giving their whole time and thought to business, and if anything goes amiss, and they make a loss instead of a profit, they are in despair and it affects them in an extraordinary manner. Others from this love of money-making become extremely

penurious, and not only will give nothing away to those in need but will deny themselves in every way. All this self-feeling should be repressed as far as possible by friends and advisers, and in the case of the young by tutors and governesses, and the higher qualities of mind should be encouraged and strengthened.

We may or may not be at liberty to state the motive we have in inculcating such lessons, that it is to ward off anything like mental trouble; but if we can, it is better to do so, for it supplies an additional inducement to listen to our advice. It may be necessary also to warn persons against the acquisition of such habits as drinking or indulgence in masturbation, sexual excess, or anything which is injurious to health, as fasting on the one hand or overeating and irregular meals on the other.

Perhaps the most serious symptom of trouble coming in the near future is want of sleep. If a predisposed person loses his or her sleep, it must be looked to. There may be a cause; some worry or other has caused wakefulness, and this should be removed if possible, or rest and change of scene may restore sleep. It may have come on without assignable or removable cause, merely from some overstrain of the brain centres, and a few doses of medicine may set it right. Again and again it happens that a week's good sleep procured by bromide, chloral, sulphonal, paraldehyde, or the like will dissipate fears and suspicions, allay excitement and irritability, and disperse the threatened mischief. The most foolish prejudice exists against the production of sleep by such medicines, and there is often a difficulty in getting a patient to take them if he has been told that he will contract the habit, will never be able to do without them, and the like. Certain it is that if the sleeplessness goes on unchecked, very grave symptoms will arise, the threatened insanity will rapidly develop and will have to be dealt with in a very different way. I have seen so many cases of impending mental disorder arrested by such measures, and so many which have not been arrested owing to the foolish prejudices of the patient and those around him, that I have no hesitation whatever in giving this recommendation. All such medicines, however, should be given under strict medical supervision. Patients should not be allowed to take or increase them at their own discretion. The effect must be watched and the drug or the dose may require to be altered or even discontinued altogether.

THE INSANE AND THE LAW.

It is necessary to say something about the relation in which medical men stand to the law in cases of insanity. There are many questions whereon we may be asked for an opinion, but the three principal points we have to deal with are: 1. The sequestration of the person or property of an alleged lunatic. 2. The responsibility of a criminal alleged to be lunatic. 3. The testamentary capacity of an alleged lunatic. I must speak very generally on these topics inasmuch as the English statute law is not the same as that of the United States, but the principles of jurisprudence of the two countries are founded on the same basis and the application by American judges is not less advanced than that of our own.

The method of procedure to be followed when an alleged lunatic is to be placed under restraint varies considerably in different countries, as I believe it does in different States of the Union, and as it has in this country. One principle has always remained unchanged, namely, that a certificate must be signed by one or more medical men before a patient can be sequestrated. In the case of pauper patients in England one certificate is sufficient; in the case of private patients two are necessary. This has been the case from the beginning of lunacy statute law. In some places, I believe, but not with us, these certificates are in the form of affidavits and are sworn evidence. There is much less uniformity in the "order" or commitment which is based on these certificates. When I first commenced practice, this order could be signed by any relative or person having some connection with the alleged lunatic, but it was not necessary for him to have seen the patient. He might not know him by sight or ever have seen him in his life, though probably this rarely happened. Then by another statute it was enacted in 1862 that the person making this "order" of detention must have seen the patient within a month, and by the present law, the statute of 1890, the relative or friend does not make the "order" at all, but becomes the "petitioner" and must have seen the patient within a fortnight. He petitions a judicial authority, magistrate, or county court judge, who makes the "order" based upon the certificates of two medical men whom he names. Previous to 1890 the order in the case of pauper patients was made by a magistrate and the new act assimilated the two classes, and now in every case the order is made by a judicial authority, but in the case of private patients he is not compelled to see the alleged lunatic before he signs. The alteration in the law was a concession to popular clamor, as complaint was made that by means of two medical men who might be

ignorant or venal, an interested relative might shut up a person who being sane would be kept in confinement for an unlimited time by equally venal asylum physicians. Such a clamor was raised by a small knot of persons, most of whom had been in asylums, and as they thought unjustly detained, that in 1877 a committee of the House of Commons was appointed to hear their complaints. This committee sat for many weeks and investigated every case which could be raked up and brought before it, and heard every official and physician practising in lunacy, and in the end they failed to find a single instance of a sane person having been shut up and detained in a private asylum, and most of the complaints proceeded from those who had been confined in public institutions.

With legislation and its enactments I have nothing to do, but certificates of insanity have still to be signed by medical men, and there does not appear to be any probability of any change being made with regard to this. Indeed it is difficult to imagine that they can be signed by any other profession. For the diagnosis of insanity accurate medical observation and knowledge are necessary. We may see many who are suffering from the delirium of typhoid or some other febrile disorder, from narcotic poisoning, from acute alcoholism, from cerebral inflammation or meningitis, or some other acute disease in which the mind may be greatly affected. Who but a physician can say that such a case is not one of insanity and forbid its being sent to an asylum?

That some magistrate or other judicial authority should make the order for the detention of a patient I hold to be a distinct advantage, and it is probable that it will become the rule, sooner or later, in all countries. But this of necessity requires a certain time. Two medical certificates must be obtained given by two medical men who must have seen the patient separately. Then a magistrate has to be found and magistrates are not always at home. Meanwhile the patient may be very violent, very dangerous, very suicidal; or he may have had no food for a long time, and forcible feeding may be urgently demanded. A delay of twenty-four hours may result in death. Our legislature has enacted that in such a case an urgency certificate may be signed by one medical man and an urgency order by a relative or friend, and upon these the patient may be placed in an asylum and detained for seven days during which a second medical certificate and judicial order may be obtained. This emergency order and certificate I hold to be a necessity, wherever delay is likely to arise from the application to a magistrate. Some people are so distrustful of medical men and magistrates that they would like every lunatic to be brought before a jury and a regular trial held, as is done in this

country when there is a commission *de lunatico inquirendo*. Such a proposition is perfectly impracticable and ridiculous; the delay in placing patients in safety would be an insuperable bar, the expense would be enormous, many patients would be seriously damaged, and experience of the commissions held in this country has shown that a jury, made up as it often is of uneducated and crotchety people, is about as unfit a tribunal to decide a question of sanity or insanity as can be devised. About the insanity of nine persons out of ten there can be no doubt in the minds of any one. If that of the tenth is to be disputed, the decision should rest with a body of experienced officials like our Board of Commissioners in Lunacy, composed partly of medical men and partly of lawyers who are competent to deal with doubtful and difficult cases.

A family physician who has known a patient perhaps for years, and sees him or her altered in manners, habits, and disposition, has no difficulty in coming to a conclusion that the alteration is due to mental disorder. He is acquainted with the relatives as well as the individual, and is sure that their anxiety proceeds from a genuine desire for the restoration of health. But we are often consulted by strangers who invoke our assistance for the purpose of obtaining a certificate of the insanity of a person who also is a stranger, whom previously we have never seen or heard of. Here before we can make an examination of the alleged lunatic we must examine those who apply to us, and inquire and satisfy ourselves that their request is *bona fide* or based on sufficient facts. Will the restraint which is desired be for the benefit of the alleged lunatic or of the applicant? Are the facts related with regard to conduct true and the statement of them reliable? Are the so-called delusions really delusions? Sometimes one hears things so extraordinary that at first hearing they appear undoubted delusions and yet I have known them to turn out true occurrences. Who is the person who makes the application? Is it a husband or wife, or father or mother? Has he or she any interest in shutting up the individual beyond the latter's welfare? What are the pecuniary relations between the parties? We must inquire also whether there is any history of drink, and whether the excitement and violence which we hear of may not be due to alcohol. In this country there is no compulsory restraint of inebriates and hence arises a strong desire on the part of friends to bring such a habit under the head of insanity. We may also have an application made to us by friends of an alleged lunatic who take his part and think the allegation unjust. Such a person may be already in restraint, or steps are being taken to place him there, and we may be asked to give an opinion against restraint. These friends will try and explain away

all that is alleged as proof of his insanity; his delusions, if they have, as is common, an elementary basis of truth, will be said to be no delusions at all; his conduct, however extraordinary, will be set down as only eccentric; his violence will be said to be due to the brutal behavior of those about him, and if the patient is a woman it will be called "hysteria," and not insanity. The interference of irresponsible friends, or of parties who form one side of a family quarrel, is often most mischievous and very harassing to those who are doing the best for the patient's welfare.

It is sometimes said that we go with preconceived opinions if we examine an alleged lunatic after having heard all that can be said about him. This cannot be helped, for it would be useless and a waste of time to examine many unless we had information beforehand. One would be glad in every disputable case to hear both sides and to approach the matter wholly unbiassed, but this is not always possible. Before going into the presence of an alleged lunatic, we ought to find out as much as we can from as many people as we can, interested and disinterested, relatives, acquaintances or servants, and compare their accounts.

It has been said that we can form an opinion of a person's sanity or insanity by what he does, what he says, or what he writes; one may add to this his look or appearance, for not unfrequently he may be clothed or decorated in such a fanciful manner as at once to convince us of his insanity. Often the troubled and gloomy aspect will indicate the melancholia, or the gay hilarity of the general paralytic or maniac will almost without questioning denote the disease. But others will not show an emotional change and we shall have to cross-examine them and elicit if possible the morbid fancies which we call delusions. I have said already (page 75) that the delusions of the insane always concern themselves. We may talk forever upon other topics, the weather or the crops, or politics or the latest sensation in the newspapers, and, unless we bring the conversation round to himself, our labor will be in vain. We are often asked to go not as medical men but in some other capacity, or to go ostensibly to see some other member of the household. Many such schemes are only calculated to defeat their own ends, and many which have been inflicted on me have ended in failure. If we go to see some one else, we cannot suddenly turn away and commence to question the patient, and if he, upon our entry and assumed business with the other, gets up and leaves the room, we have no excuse for detaining him. But if we go as physicians, we assume the right of questioning him about his health, which we shall have heard is out of order, and about everything which directly or indirectly affects it, such as occupation, resi-

dence, mental work or worry, and habits. This will give us an opportunity of bringing in the subject of his delusions, whether they are gloomy or gay, whether he thinks himself the victim of plots and poison, the inventor of something wonderful, or the possessor of unbounded wealth. He may resent our questions and assert that some one else is his medical attendant and that he wants none of our advice, but we can assure him that we have come at the request of his family or medical adviser; we tell him that they have been alarmed at his symptoms, at what he has said or done or threatened to do, and this he must explain away or deny. And in his justification, explanation or denial he will generally open up the real state of his mind.

It is always satisfactory to discover delusions, for these, if they are really delusions, indicate a stage of insanity which is not the very commencement but one where perverted feelings and emotions have taken the form and shape of insane conceptions and ideas. But we must be sure that they are delusions, either because the statement is so absurd or impossible that it can be nothing else, or because we have trustworthy information from others of whose credibility we require no further proof. Such information requires to be well weighed, because friends, even those who are speaking perfectly *bona fide*, are apt to exaggerate, and to attach an importance to matters which are of little consequence, or they may themselves be speaking from hearsay and relate to us things which have been told to them, and are not accurate or are gross perversions of what has occurred.

We have far greater difficulty in the case of patients who have no delusions, but whose defence of their whole conduct is, so to speak, one great delusion, if they justify or explain it. Our difficulty here is that we seldom see their worst behavior, for they have sense enough to behave themselves decently in our presence. We shall tax them with what we have been told and this they will forthwith deny absolutely, or explain away matters which taken singly sound trivial, but taken together indicate the change which has come over the individual. It is as well to confront the informant and the alleged lunatic, if possible, and hear the latter's defence of what the other asserts; but very often the friends shirk this, and after telling us what they know or think, leave us to examine the patient alone. Sometimes when the disorder is advancing and growing from day to day, though there may be no delusions to-day, they may be present to-morrow or the next day. But in many cases in which insane conduct is the chief feature and the condition is chronic or stationary, there may be no delusions at any time, and it is a waste of time and patience to look for them. But we are not to pronounce the patient sane because we find none, but must try and discover other mental defects.

There may be great rambling and incoherence of thought; not incoherence of words, such as we find in the delirium of acute mania, but an incoherence and inconsequence of thought, which is quite incompatible with sanity or business capacity. The patient rambles from topic to topic, and do what we will, we cannot keep him to the point. If we ask him a simple question and ask it perhaps half a dozen times, we fail to get a plain and direct answer. If we question him as to the extravagance or absurdity of his acts, his dress or conduct, his answers may be ridiculous or childish, or he may treat the whole matter with a silly hilarity which sufficiently indicates the weakness of the mind. And we must consider not the wickedness or enormity of the conduct or acts, but the irrationality. We shall derive assistance also from the history of the case, from such origins as epileptic or epileptiform attacks, blows or falls on the head, or other causes of disorder. Nor must we forget to inquire as to the history of the family and the occurrence of insanity in any of its members.

We may have some difficulty in coming to a decision when we are examining persons who are demented, that is, whose minds are feeble and weak either congenitally or from disease or old age. The latter class are persons whose minds were once strong and healthy, but who from fits or drink, chronic insanity or age have become weakened in memory and understanding. Probably there are no delusions, but the chief symptom is a failing memory. They may be able to tell us all about their early life, but what happened yesterday or the day before has passed away. But all this is a question of degree. Can the patient recollect enough to take care of himself and his affairs? A man who forgets to-day what he did yesterday may be persuaded to sign some deed to-day and to-morrow will be entirely ignorant of what he has done. Such a person cannot be said to be able to take care of his affairs, but on the other hand he is not on that account a fit and proper person to be placed in an asylum, if his means allow of his living elsewhere. If he cannot recollect whether he has a wife or not, or how many children he has, clearly he is incompetent to make a will. But it all is a question of degree, and every case must be judged not by the laws of science but by facts and common sense.

Then there is the class of the congenitally weak-minded or imbecile, a class between idiots and the sane, most troublesome to deal with from every point of view. There will be no delusions and no loss of memory; on the contrary many of them have prodigious memories. But they are unteachable, untruthful, often vicious and depraved, destructive, cruel to children and animals, and without any idea of the value of money. Their vicious conduct we probably shall not see, and if we tax them with it they deny it. There are many

patients who can control themselves, behave properly, and answer rationally during the half-hour of our examination, and leave us in doubt as to what we are to say about their sanity or capacity to take care of themselves and their affairs. But if we lived with such people for a week, or even in many cases for twenty-four hours, and saw them, not on their guard but in their natural and genuine condition, we should have no hesitation in pronouncing them insane. The opinions of those who do live with such patients are of the greatest value, and should far outweigh those of physicians who perhaps have seen the alleged lunatic once or twice only for a short period.

I have said already that many patients from experience of their own or the hints of friends know very well what the delusions are of which we are in search, and know that it is for their interest that these should be concealed. They will tell us that they never had such fancies, or if that is useless, will say that they have given them up, and admitting they were delusions, will declare that they have entirely lost them, and wonder how they could ever have entertained such nonsensical ideas; and yet they may be possessed by them all the time. Very often in such cases we derive most valuable assistance from patients' letters and other writings. Many are fond of writing; they write to public officials, to friends, to physicians, and fill sheets of paper with statements of their case and grievances which may be purely imaginary. And thus, though they will deny everything to us orally, their papers indicate the presence of the old delusions. Conversation with others, as attendants or other patients, will sometimes have a like result. That which a man will deny to us he will talk of freely to his attendant, adding, it may be, an injunction that he is not to tell.

Feigned Insanity.

From considering people who try to conceal their insanity we pass to those who feign it. In this country insanity is feigned to escape from responsibility involving serious consequences, or to get a release from work in prison and better diet and especial treatment. The latter is probably the most frequent reason for such feigning. Abroad it is often assumed to avoid military conscription. The possible motive for feigning insanity should be borne in mind and the time at which the symptoms were first manifested must be carefully noted.

The great mass of malingerers being uneducated people without any knowledge or experience of insanity, the attempt will generally be clumsy and easy to detect; but here and there an educated man, or one who has had an opportunity of seeing the insane, may with greater success carry on the cheat.

The insanity simulated may be transitory or persistent. The individual will pretend or assert that he was in a delirious or unconscious state at the time of the committal of the criminal act, and profess that he knows nothing about it and is not aware that he ever did it. By this he virtually simulates the form of the transitory mania, which is occasionally seen as the outcome of an epileptic attack or as taking the place of the latter. Such attacks, however, are extremely rare, and are not usually so transient as to be unnoticed by others, or so severe as to take away all recollection of what was done in them. Here we must inquire into the previous history of the prisoner as regards former attacks of insanity, epilepsy, blows, or cerebral symptoms following drink.

We may be told by another that he suffered from an irresistible impulse to commit the act and from some sudden and overwhelming idea. He may simulate the so-called *impulsive* insanity, or he may allege a delusion and pretend that owing to it he was urged to the deed. In such cases other symptoms must be looked for, the past history, if possible, scrutinized, and the character of the deed considered, the motive or want of motive, its senselessness or eccentricity. Acts of violence towards self or others may be sought to be excused in this way and also acts of indecency, exposure of person or unnatural offences.

The cases, however, in which the feigned insanity is represented as transitory or past are rare in comparison with those in which conduct is displayed for our inspection. Now a real lunatic, when approached by a stranger, appears at first rather better than worse, and more on his guard; he tries to bring his wits together and understand what is going on. But a sham lunatic, when we go to him, redoubles his efforts to seem insane; he is more energetically noisy, idiotic, and maniacal. A sham lunatic always wishes to be thought a lunatic. If we ask him whether he is out of his mind, he tells us at once that he is—in fact, he dare not say the opposite. But a real patient rarely admits it, unless he be in the depth of melancholia.

Feigned insanity is almost always overdone. As there is no subject on which such erroneous notions prevail among people in general, so the imitation is, with rare exceptions, a bungle. If noisy, acute and violent mania is the form assumed, detection is easy. The malingerer, unlike the true maniac, will tire himself out and go to sleep. No sane person can maintain the incessant action, singing, and shouting of a genuine maniac for any but the shortest time. No genuine maniac would in the middle of all this, at an early stage of the attack, go to sleep and sleep many hours. If such people are watched without their knowledge, there will be little room for doubt.

If insanity without noise or violence is feigned, the sham lunatic usually pretends to have lost all reason, memory, and understanding. He will not give one correct answer to the simplest question; he will not know his own name but will display an ingenuity in evading answers and talking nonsense entirely at variance with the loss of mind he pretends to have suffered; or he will answer questions correctly about everything which does not concern himself, but so soon as we question him as to his crime or history, he becomes suddenly demented and entirely deprived of memory and intelligence. Dirty habits may be assumed to further the idea of dementia, but it is to be remembered that such dementia does not come on suddenly but is the result of organic disease or long-standing insanity. And it will often be found that casual remarks made in the hearing of such a person are heeded and acted upon, showing that the attention of this seemingly demented individual has been closely fixed upon all that has been going on.

A man may feign melancholy and sit silent and desponding, refusing to speak. He may refuse his food or say that it is poisoned. Slighter forms of melancholia may also be assumed, and if a great fear of suicide and suicidal impulse is pleaded we may have some hesitation in saying that it is feigned. There is sometimes a desire to gain admission into an asylum and slight attempts at suicide may be perpetrated to effect this object. Such attempts may easily be estimated at their proper value. But there may be some doubt and difficulty in the case of hysterical women who are on the borderland, whom some will deem hysterical and others insane. I saw a gentleman some time ago who had made several weak attempts at suicide, but whom I strongly suspected of shamming. He went afterwards to another asylum whence I believe he was discharged, but I heard afterwards that eventually he did commit suicide. There are others who are also on the borderland, the weak-minded criminal class in whom madness and badness are so intermingled that it is difficult to assign their proper place. Some are so violent, outrageous, and destructive, so silly in their motiveless fury and childish in mind that we may call them imbeciles or insane and have good grounds for our opinion. But these are not the people who feign insanity. It has been said that a prolonged assumption and pretence of any form of insanity will sometimes, in the end, really produce actual insanity. The reason, probably, is that the prolonged strain upon the mind needed to sustain the imposture is too great and causes it ultimately to break down. Whether in prison or in an asylum we shall have ample opportunities of watching a suspected malingerer. Various plans have been suggested for making such a person confess. Of these probably

the galvanic battery is the best and the most harmless. Certain medicines may have some effect or the threat of a cold-water bath or the actual cautery. But if upon careful examination we entertain no doubt as to the imposture, we do not need a confession to indicate the course to be pursued.

Capacity to Make a Will or Contract.

Mr. Renton says with regard to the testamentary capacity of the insane and their capacity to enter into contracts such as marriage, that "in each of these departments we find three, and the same three stages of development. At first, the question of capacity is treated solely as a question of fact, to be determined according to the ordinary rules of evidence. Then there comes an intermediate and metaphysical period, coincident in each case with a great advance in medical knowledge, and inspired by the idea that the mind being one and indivisible, and insanity being a disease of the mind, any derangement of the faculties must be fatal to civil capacity." This doctrine was laid down by Lord Brougham in the case of *Waring v. Waring* (1848), and was followed until 1870, being expressly recognized by Sir I. P. Wilde (Lord Penzance) in the case of *Smith v. Tebbitt* (1867). But in 1870 Chief Justice Cockburn remarked that both the above named were cases not of partial, but of general insanity with multifarious delusions of the wildest and most irrational character, abundantly indicating that the mind was diseased throughout; and in the celebrated case *Banks v. Goodfellow*, the Divisional Court of Queen's Bench held "that a jury should be told that the existence of a delusion, compatible with the retention of the general powers and faculties of the mind, will not be sufficient to overthrow a will, unless it be such as is calculated to influence the testator in making it."

This is the old doctrine of *partial* insanity, and it applies to the laws of contract and marriage. In these no man is counted a lunatic unless he is incapable of appreciating the nature and of passing a rational judgment upon the results of the particular act which is the subject of judicial consideration.

From this it is plain that at the present day every case, civil as well as criminal, in which insanity is set up must be tried each by itself according to its merits and the evidence adduced on either side, and not according to any doctrine, medical or legal. The mere existence of mental disease does not vitiate testamentary or contractual capacity, but it must always be remembered that it is for the person who sets up the testamentary act to prove that as a fact the delusions

or other unsoundness, though connected with the dispositions of the will, did not influence the testator's mind. It would not rest with the other party to show the contrary."[74]

To prove this negative, that the insanity did not influence the will made by an insane man, is a very difficult matter, and this was strongly put by a very eminent judge, Mr. Justice Hannen, for many years president of the Probate Court. In a celebrated case *Smee v. Smee* it was shown that the testator was a man of excellent business capacity, and had for some years held a high position in the Bank of England where it was his duty to attend to most intricate accounts and to make most delicate and minute calculations. Mr. Justice Hannen said: "The law on the subject is this. The fact that a man is capable of transacting business, whatever its extent and however complicated it may be, and however considerable the powers of intellect it may require, does not exclude the idea of his being of unsound mind. . . . A few years ago it was generally considered that if a man's mind were unsound in one particular, the mind being one and indivisible, his mind was altogether unsound, and that therefore he could not be held capable of performing rationally such an act as the making a will. A different doctrine subsequently prevailed, and this I propose to enunciate for your guidance. It is this. If the delusions could not reasonably be conceived to have had anything to do with the deceased's power of considering the claims of his relations upon him and the manner in which he should dispose of his property, then the presence of a particular delusion would not incapacitate him from making a will. But you should specially bear in mind that any one who questions the validity of a will is entitled to put the person who alleges that it was made by a capable testator upon proof that he was of sound mind at the time of its execution. The burden of proof rests upon those who set up the will, and *a fortiori* when it has already appeared that there was in some particular undoubtedly unsoundness of mind, that burden is considerably increased.

"This is an extremely delicate and difficult investigation and may be illustrated by reference to the physical world. There might be a little crack in some geological stratum of no importance in itself, and nothing more than a chink through which water filters into the earth; but it might be shown that this flaw had a direct influence upon the volume or color or chemical qualities of a stream that issued from the earth many miles away. So with the mind. Upon the surface all may be perfectly clear and a man may be able to transact ordinary business or follow his professional calling, and yet there may be some idea through which in the recesses of his mind an influence is pro-

duced on his conduct in other matters. You have to say whether or not the flaw or crack in the testator's mind was of such a character that though its effect may not be seen on the surface of the document before you, it had an effect upon him when dealing with the disposition of his property."

These are most important words, coming as they did from so eminent and experienced a judge as Sir James Hannen, a judge who leaned towards the upholding rather than the upsetting of doubtful wills. No doubt many chronic patients are perfectly able to make a will in spite of some delusions. If we know them well and know exactly the limit of their insanity, and how far it affects or does not affect their feelings towards their relations and knowledge of their property, we shall have no hesitation in giving evidence accordingly. But when the insanity is recent and ideas and feelings are changing every day, it will be difficult to say that a will made at such a time is not influenced by it. As Sir James Hannen said, an insane idea may affect the disposition of property, though apparently the flaw or crack is in no way connected with such a transaction. The connection or train of thought in an insane mind it is impossible to follow with certainty, or to test by the consideration of a sane mind. There is a case often quoted of a young man of imbecile mind who was passionately fond of watching windmills. His friends, thinking a change would be good for him, moved him to a place where there were no windmills. He set fire to the house and mangled and nearly murdered a child, not from pyromania or homicidal mania, but simply because he wished to leave his new abode and be sent back to a place where he could see windmills.

Lucid Intervals.

If the practice prevails in courts of law of considering every case separately according to the evidence adduced, apart from any theories of knowledge of right and wrong, or of general or partial insanity and the like, there will not be much difficulty in dealing with the question of lucid intervals. "If it can be shown that an act was done during a period when the testator's insanity was removed, or, in other words, during a lucid interval, the validity of such act will be established, notwithstanding the impossibility of showing the testator's general sanity. In other words, if it be established that the party doing the testamentary act, although habitually afflicted by a malady of the mind, has intermissions, and that there was such an intermission of the disorder at the time of the execution of the testamentary act, the general habitual insanity will not make the act in-

valid. But though this may be stated with perfect confidence as a preliminary axiom, it is by no means easy to say what exactly constitutes a *lucid interval.*" [74] As medical men we know that in alternating insanity (*folie circulaire*) and intermitting and recurrent insanity patients vary much at different times, and in the intervals are often comparatively sane and able to make a will. A man may not have recovered so entirely as to be precisely what he was before, or so that he can take care of himself and manage his affairs in all respects, but he must have at any rate for a sufficient time have regained a disposing mind. "He must understand the nature of the act and its effects, the extent of the property of which he is disposing; shall be able to comprehend and appreciate the claims to which he ought to give effect; and with a view to the latter object, no disorder of the mind shall poison his affections, pervert his sense of right or prevent the exercise of his natural faculties; no insane delusions shall influence his will in disposing of his property, and bring about a disposal of it which, if the mind had been sound, should not have been made" (*Banks v. Goodfellow*, 1870). Evidence to prove that the testator had such capacity must be adduced by those who set up a will.

Criminal Responsibility of the Insane.

The responsibility of the insane and the method by which a conclusion is to be arrived at—in other words, the legal test of lunacy—are subjects on which the legal and medical professions have disputed for many years. Lawyers are prone to suggest that the medical profession is anxious to excuse crime under the cloak of insanity, while the latter look upon the so-called legal tests of insanity, especially the right-and-wrong test, as antiquated, misleading, and contrary to fact. That there is this disagreement and confusion between the professions is principally due to the well-known answers of the judges given after MacNaughten was acquitted of the murder of Mr. Drummond on the ground of insanity. The majority of judges since that time, both English and American, have looked upon these answers as of binding authority and as containing the whole law on the subject. Other judges, however, have not taken this view, and have felt themselves at liberty to ignore such authority in cases in which they have thought right to do so. Chief Justice Sir A. Cockburn considered "that they only express so much of the law as was necessary to answer the specific questions which had been put to the judges." [75]

The important answer of the judges is that given to questions two and three, especially this part of it, "to establish a defence on the

ground of insanity, it must be clearly proved that at the time of the committing of the act the party accused was laboring under such a defect of reason, from disease of the mind, as not to know the nature and quality of the act he was doing, or if he did know it, that he did not know he was doing what was wrong."

I need not quote the whole of these answers, but may remark that one, and a very able judge, Mr. Justice Maule, dissented from them and gave answers of his own. Nothing further was done by the House of Lords after they were given, and we have not the authority of that House for saying that the one set of answers is more correct than the other.

The latest work on the subject which we have in this country is "The Insane and the Law," by Mr. Pitt Lewis, Q. C., Dr. Percy Smith, and Mr. J. A. Hawke, of the Middle Temple (Churchill, 1895) and the present state of things is very clearly put forward. The questions and answers, they say, deal with three subjects. They state (1) the legal position of persons who commit crimes while they are under the influence of insane delusion in respect of one or more particular subjects or persons; (2) the legal position of persons who commit crimes when they are "in other respects insane"; and (3) the proper mode of examining a medical witness in cases in which the issue to be tried by the jury is whether a certain person is, or was at a certain time, sane or insane.

The first of these subjects is considered by the judges in the first, second, and fourth of their answers, and the substance is that a person who commits a crime under a delusion as to facts, but who is not in other respects insane, is entitled to an acquittal when that state of facts would, if it really existed, have justified his act. In other words, it may be said that the insane are given no immunity on the state of facts supposed, which the sane, on the same state of facts, do not possess. Now the presence of delusion is but evidence of the existence of an unsoundness of mind which cannot be shown to exist only with regard to the particular subject as to which there are delusions.

The second subject is dealt with in the answer to questions two and three, a portion of which I have quoted. It is intended to be applied to all cases of insanity, not to cases only in which delusions exist. In *all* cases, say the judges, when the defence of insanity is set up, it must be clearly proved that at the time of the committal of the act, the accused party was laboring under such a defect of reason, from disease of the mind, as not to know the nature and quality of the act he was doing, or that, if he did know it, he did not know that he was doing what was wrong.

The "right" and the "wrong" spoken of here are *moral* right and wrong and not mere legal right and wrong. Everything in this answer turns upon the meaning of the word "*know*." The authors of the work above mentioned submit that this word "*know*" ought to be taken as implying the possession of a knowledge carrying with it a power of discrimination and choice. In Genesis we read that our first parents having a knowledge of good and evil which enabled them to exercise a choice, deliberately and intentionally chose the evil course. The judge in *Oxford's* case, Lord Chief Justice Denman, used these words: "A person may commit a criminal act and not be responsible. If some contributory disease was in truth the acting power within him which he could not resist, he will not be responsible." Many judges have enunciated views of the same kind, one recently affirmed that the responsibility of an accused person may depend upon the answer which must be given to the question "Could he help it?" [7]

For my own part I would say with reference to this knowing right from wrong, that there are degrees of such knowledge in the development and evolution of the brain and mind. My dog knows right from wrong. I can tell by his look when he has done wrong; he is conscious of it, and his look shows that he is. A child knows right from wrong; a child of six knows perfectly well that he ought to do this and ought not to do that, he looks for reward and fears punishment, but the law considers a child under the age of seven incapable of entertaining a criminal intent. An idiot, unless he be of the very lowest type, knows when he is doing wrong, and so does every patient in asylums, even the most demented, in fact asylums are managed by a system of rewards and punishments proportionate to the minds with which we have to deal. All these, animals, children, idiots, and insane, know right from wrong, and are responsible and liable to punishment each in his degree. Knowledge here is limited by the degree of development of the individual and responsibility is limited in the same way. The knowledge of a man who is proved in other ways to be insane must be looked upon as the knowledge of an imperfect mind, not on the level of ordinary unimpaired minds, but as having, to quote Lord Denman's words, "a contributory disease as the acting power within him," and as the knowledge is by the disease limited, so must be the responsibility and the punishment.

Let us now consider the views of American jurists on the subject. In an able paper published in the *Medico-Legal Journal* of March, 1889, J. Hugo Grimm, Esq., of St. Louis, Mo., reviews the practice of the American courts and tells us that by the law of England a person, although insane, is responsible if he knew "the nature and

quality of his act" or "that it was wrong," irrespective of what effect his insanity might have on his power of self-control. In other words, if one knows an act to be wrong, he must refrain from doing it, and he is not allowed to show that the insanity deprived him of his freedom of will. This, he says, is also the law in many, even the majority, of the American States. But a considerable number of the States admit evidence going to prove that although the accused had the capacity to know the natural consequences of his act, he yet was unable, by reason of disease affecting his mind, to desist from doing the act which was forbidden by law. The legal principle that when an act is done involuntarily—when it is not the free act of the accused—he is not responsible for it, is clear. The real question which lies at the bottom of this troublesome problem is, "What evidence is competent to show an absence of free-will?" The courts which refuse to admit evidence that mental disease can destroy the power of self-control irrespective of its effect on the intellect do so upon certain theories. The first is based upon a metaphysical notion as to the nature of free-will. The will, it is said, is always free to act whenever the mind can see the natural consequences of an act, even though the mind is diseased. This theory, however, is all but completely overthrown by the recent investigations of medical science.

Another theory is based upon considerations of public policy. It is said that though it could be positively shown that insanity did destroy the will while it left the intellectual capacity necessary to responsibility, such fact would constitute no defence whatever. With regard to this it may be urged that persons acquitted on the ground of insanity are not turned loose upon the community but confined in asylums. Also, the court would define the responsibility to the jury and determine what facts may be proved as showing the existence of disease, exactly as is done in a case in which they have to determine whether the accused "knew the nature and quality of his act" or "knew that it was wrong." The judge will direct the jury that to constitute a crime the accused must have had a criminal intent, and that if his mind was so affected by disease as to make it impossible for him to have had this criminal intent, he must be acquitted. But there is another element just as essential to crime, which is free-will, and how can courts refuse to instruct juries that if there is an absence of this free-will, there can be no crime. That free-will is an essential element of crime, and that it should be left to the jury to determine whether or not the accused suffered under such a degree of insanity as destroyed his free-will, was recognized by Chief Justice Shaw in the case of *Commonwealth v. Rogers;* he said: "If then it is proved, to the satisfaction of the jury, that the mind of the accused was in a

diseased and unsound state, the question will be, whether the disease existed to so high a degree that for the time being it overwhelmed the reason, conscience, and judgment, and whether the prisoner, in committing the homicide, acted from an irresistible and uncontrollable impulse; if so, then the act was not the act of a voluntary agent, but the involuntary act of the body, without the concurrence of the mind directing it."

Mr. A. Wood Renton, of the English bar, in an article published in the London *Law Quarterly Review*, and afterwards in the New York *Medico-Legal Journal* of September, 1890, says: "It may well be doubted whether the legal profession itself is fully alive to the radical change which has passed over the old law as to the criteria of capacity and responsibility in mental disease during recent years. The object of the paper is to set forth the chief incidents in this silent revolution as briefly and clearly as may be." He first treats of testamentary capacity and capacity to enter into contracts such as marriage, and then analyzes the law of criminal responsibility in mental disease. "The question is, what standard of criminal responsibility is now applied in cases of alleged unsoundness of mind? Owing to the absence of any adequate provision in our law for the review of criminal cases by a court of appeal, we have no authoritative judgment upon the subject to set side by side with such elaborate 'opinions' as that of Judge Somerville in *Parsons v. The State*. But every barrister who has gone on circuit knows that 'the rules in MacNaughten's case' are avowedly manipulated by judges, and, if need be, defied by juries, in order that injustice may not be done to the innumerable prisoners whose mental disease refuses to conform to any of the orthodox types, which alone are nominally recognized by English law. Even the inebriate, the *voluntarius dæmon* of Coke, who formerly had 'no privilege thereby, but what hurt or ill soever he doeth, his drunkenness doth aggravate it,' is now held to come within the meaning of the rule in MacNaughten's case, and to be irresponsible, if he did not know the nature and quality of his acts. Loss of self-control, resulting from any disease of the mind, is in practice regarded as a valid exculpatory plea. It appears, therefore, that there is now no standard, external to individual conduct, for determining the capacity and liability of the insane, and that the law knows but one test of lunacy, viz.: was the person whose act is in question able to understand its nature and to pass a fairly rational judgment on its consequences to himself and others; and was he a free agent so far as that act was concerned?"

That this is the test which medical men would lay down may be assumed without hesitation. I have quoted the opinions of lawyers

and not of medical men, as it is important to show that the legal profession is slowly following the lead and teaching of the medical. "English law," says Mr. Pitt Lewis, "is progressive, advancing with the times. It would be inconsistent with the whole of the history of the law of insanity, and indeed with the whole spirit of English law, to say that the growth of this branch of the law was suddenly stopped at any given point, and then became rigid and inelastic."

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