THESIS

on

MANIA,

with Special Reference to its Acute Variety,

for the degree

of

DOCTOR of MEDICINE

of the

UNIVERSITY of EDINBURGH

by

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MANIA: WITH SPECIAL REFERENCE TO ITS ACUTE VARIETY.

PROLOGUE.

Morbid mental exaltation and excitement, differing in degree and nature, are phenomena of so frequent occurrence among the insane, and present so many problems for solution as to their causation, prevention and treatment, that I have been induced to offer the following statements and observations regarding them in the form of a Thesis.

In the course of my experience as an Assistant-Physician, first in the Royal Edinburgh Asylum and latterly in the Royal Aberdeen Asylum, a very large number of cases, occurring in both sexes, have come under my care, in which maniacal excitement has been a prominent feature. Such cases present many difficulties, not only to the Asylum physician, but also to the general practitioner whose patients they may have been before their admission to the Asylum, and also, but much less frequently, to the lawyer, whose intervention may be called for on account of conduct by the patient that brings him within the arm of the Law.

The treatment of maniacal excitement, in its acute or delirious, impulsive, and chronic or recurrent forms, is one of the most difficult problems in asylum medical
work. My experience so far seems to teach me that it is futile to lay down any hard and fast rule as to the treatment of any one form of mania. In the treatment of mental disease, even more so than in the general practice of medicine, it is of the utmost importance to treat the individual as well as the form of disease from which he suffers.

Much uncertainty and difference of opinion exist at present among alienists as to the precise meaning to be attached to many of the terms employed in the description and classification of mental diseases. The term mania itself has been a frequent and bitter bone of contention. On the one hand, its meaning has been so extended by some as to include almost any form of mental disturbance exhibiting excitement or exaltation: on the other, so restricted, that other authorities state that mania is the rarest form of mental disease.

SOUKHANOFF and GANNOUCHKINE, of the University of Moscow, state (Annales Médico-Psychologiques, 1905) that as the result of an enquiry into the records for fifteen years of the psychiatric clinique in Moscow, they were able to distinguish only 40 cases of mania out of a total of 4434 cases admitted, and they add the remark that 'mania is a very rare psychical disease.' It may be so, but such statements only prove how widely authorities differ as to the meaning to be attached to
the term mania.

Professor EUGENIO TANZI of Florence states, in his "Trattato delle Malattie Mentali," that during one session he was unable to show at his clinique even one case of what he calls true mania, and was obliged to fall back instead upon cases of other forms of mental disturbance which exhibited at the time maniacal excitement. This point of view is very different from that which admits the occurrence of such forms of mania as Simple Mania, Acute Mania, Delirious Mania, Delusional Mania, Homicidal Mania, Epileptic Mania, Chronic Mania and so forth.

The subject is further complicated (or simplified) by the view adopted by KRAEPELIN, according to which the majority of cases of mental disturbance are grouped together under the common term of Manic-depressive insanity. Under this term KRAEPELIN includes most cases of mania and melancholia, and would restrict the term melancholia to the comparatively rare cases of simple climacteric or senile melancholia, and that of mania to a still less frequently occurring form of disease.

DEFINITION.

While I shall endeavour, when treating more particularly of the Etiology of Mania, to deal with the data upon which a classification of the different forms
of Mania may be based, for the present, and as regards the description of the symptoms of the disease and its treatment, I shall define Mania as "morbid mental exaltation or delirium, usually accompanied by insane delusions, always by a complete change in the habits and modes of life, mental and bodily, by a loss of the power of self-control, sometimes by unconsciousness and loss of memory of past events, and almost always by outward muscular excitement, all those symptoms showing a diseased activity of the brain convolutions." (CLOUSTON: "Mental Diseases," Sixth Edition, 1904).

The essential points, as it seems to me, in the foregoing definition of Mania are the following:

(1) The morbid mental exaltation or delirium (excitement).

(2) The presence of mental confusion, amounting in some cases to more or less complete unconsciousness.

(3) The motor excitement, which may exist in any degree from mild restlessness to wild, uncontrollable and dangerous movements.

The change in the habits and modes of life, while undoubtedly a characteristic in many cases of mania, is not to be observed in others, so far as my experience goes; and in some cases I think that the tendency of
the maniacal attack, at least up to a certain point, is rather to accentuate and develop the real character of the individual.

With regard to the association of mental confusion or even unconsciousness with mania, it is held by some authorities that the type of mental excitement that is met with in the form of insanity entitled "Folie Circulaire" is lucid, and not accompanied by confusion, hallucinations or delusions (BRUCE, "Studies in Clinical Psychiatry," 1906).

This agrees with my own experience in the cases of several patients who are subject to recurrent attacks of acute and sustained excitement, but who exhibit no signs of mental confusion or dulling of consciousness, and in certain of whom there appears to be a positive excitation of the faculty of memory.

Of all the forms of mental disturbance, undoubtedly those possessing a maniacal character appeal most vividly to the popular imagination. When a layman makes use of the term "lunatic" or "insane" or "mad" or "crazy" or "off his head" he has usually in his mind the unfortunate sufferer from some form of mania. To the general public, a madman is a maniac. The more acute manifestations of the disease, with their restlessness, noisiness, erratic and impulsive conduct, render the subject of mania a much more prominent object to the public eye
than is the sufferer from melancholia who is reserved, evasive, self-centred and disinclined for action.

The Roman Law made two classes of the dementes, or mad; furiosi, those who were excited and violent, and mente capti, those who were deficient in intellect.

According to a learned French editor of HIPPOCRATES, the Father of Medicine recognized three distinct conditions of the mind: mania, melancholia, and mutismo. It is apparent from reference to ancient classifications of mental disturbance that there was a tolerably clear recognition of three different morbid mental conditions, that of excitement, that of depression and that of fatuity. Of these three, the one that appears to have attracted most attention is that of excitement.

While typical and acute cases of mania may easily be recognized, even by those who possess no expert knowledge of mental disorder, certain manifestations of the disease present very great difficulties, and this is apt to be particularly the case when medico-legal relations arise. The recent trial of Thaw in New York, for the murder of Stanford White, illustrated how wide was the difference of opinion among experts in lunacy in the United States regarding the state of his mind at the time when he committed the deed, and also showed how different may be the view taken by the legal mind from that adopted by the medical expert. The lawyer claims
to view the case from the standpoint of practical common sense and the protection of the public: the medical man looks upon the accused as a patient, and claims that he is the victim of a pathological condition of his brain. From its medico-legal aspect, mania in its various manifestations is therefore one of the most interesting of the forms of mental disease. The liability of patients suffering from certain forms of mental disorder to sudden and totally unsuspected attacks of explosive violence renders the question of their detention and employment in asylums one of very great difficulty. Such patients may give no indication of the possibility of their being liable to such sudden impulsiveness of conduct. This is illustrated in the history of a case of which I shall subsequently give a full account, but which may here be shortly stated as follows:

The patient was a young man of 21, an agricultural labourer, who was admitted to the asylum suffering from the hebephrenic variety of dementia praecox. For nearly seven months he was daily employed in outdoor work on the farm attached to the asylum, and during all this period he was listless and uncommunicative but docile and industrious, and on no occasion showed any sign of excitement. He then suddenly, and for no reason apparent at the time or stated by him subsequently,
swung round a scythe which he was carrying on his arm, and nearly severed the head from the trunk of an attendant at whose side he was walking on their way back to dinner from the roadside where he had been cutting thistles. The patient's mental state after this explosive outburst, for which he himself could give no reason, remained to all appearance exactly what it had been for seven months before the committal of the deed.

The manifestations of mania indicated by the terms pyromania, kleptomania, nymphomania, homicidal mania and the like, not infrequently bring the subject of them before the law, and in such cases there is the extreme likelihood of an injustice being inflicted upon the accused person, unless medical opinion is called for, and the medical expert is able to convince the lawyer that it is a case, not of deliberate crime, but of mental pathology. The avoidance of an unjust sentence upon the accused person must not, however, lead to the infliction of an injustice upon the public, and the delinquent should not be set at liberty if there is reason to believe that he may commit the wrong action again. Though saved from the prison, he may require to be committed to the asylum.

It has probably been the lot of most practising physicians of any experience to have met with one or more cases in which a hitherto well conducted and
exemplary individual has distressed and puzzled his friends and his doctor by his erratic and unreasonable behaviour. Such maniacal aberrations are frequently the prelude to the development of the certifiable signs of general paralysis, but they frequently bring the subject of them into the hands of the Police. I have met with several cases of general paralysis where the first diagnosis of the disease was made by the prison doctor, under whose care the patient had been brought on account of the commission of some crime, usually of an impulsive or utterly foolish and fatuous nature.

The sub-division of mania into its different forms is a proceeding the extent of which depends very much upon the view taken of the disease. If regarded from the symptomatological point of view, which till recently has been almost the only view taken of any form of mental disease, the varieties of mania are practically endless. They are almost necessarily as numerous as the maniacal manifestations themselves. The already long list of terms such as homicidal mania, puerperal mania, dipsomania, pyromania, kleptomania, planomania, nymphomania, erotomania, etc., might be added to almost indefinitely. Our knowledge of the pathological conditions underlying and associated with various forms of mental disease is at present so extremely meagre and confused that a classification of mental diseases based
upon their pathology is impossible, and the unpracticability at present of such a classification is nowhere more obvious than in the case of the different forms of maniacal disturbance. It is highly improbable further, in my opinion, that a distinct pathology for many of the conditions indicated by the terms above mentioned will ever be demonstrated. There seems to be no reason to believe that pathological conditions, if any, existing in the individual who exhibits kleptomaniacal tendencies should be different from those that may be present in the subject of pyromania. It is here that the inherent difficulty in the classification of mental diseases and deviations becomes apparent. Not one factor, but many factors, must be considered; and we have much yet to learn before we can strike a just balance between hereditary predisposition, environment, toxaemia in the widest meaning of the term, and the many other factors that are considered to play a part in the causation of insanity.

The division of mania into acute, recurrent, and chronic forms has much to commend it from a practical point of view. It is possible to include under these three terms nearly all, if not all of the forms of maniacal excitement as met with in asylum practice.

BRUCE ("Studies in Clinical Psychiatry," 1906.) takes the view that there are two types of mania. He
describes firstly as acute mania or excitement with confusion, a condition of excitement associated during the early stages with complete loss of consciousness, with hallucinations and illusions, with complete loss of the powers of attention and memory, with incoherence of speech and loss of comprehension of language spoken or written, while on the physical side there are evidences of very acute toxaemia. The second type is a condition of excitement, without confusion, but rather associated with a hyperacute consciousness, without hallucinations or delusions. The powers of attention are not lost, but wander loosely from subject to subject. The memory is often very acute. The speech, though rambling, disjuncted and inconsequent, is not, in itself, incoherent. The patient readily understands spoken or written language, and, although the writing may be fantastic in style and composition, the power of writing is not lost. Physically, the symptoms of toxaemia are much less severe. This type is described by BRUCE under "Folie Circulaire" or excitement without confusion. Cases of recurrent mania he would describe as conditions of continuous toxaemia with recurrent attacks of mental excitement with confusion. The acute mania or excitement with confusion of BRUCE corresponds to the "raving madness" of the older authors, and to the acute mania of MACPHERSON, CLOUSTON, and other writers who have
described the disease from the standpoint of its clinical symptoms. The disease is the same, but in the case of the earlier authors it is regarded mainly from the symptomatological point of view, whereas by Bruce stress is laid rather upon the underlying toxaemic conditions so far as he has been able to demonstrate their presence.

Chronic Mania may be defined as the persistence, in a modified and less acute form, of certain of the symptoms of acute mania, the patient not having recovered from the attack. On the one side it is divided from acute mania by an indefinite and arbitrary boundary, while on the other side it tends to pass into secondary dementia. Chronic mania, indeed, usually presents certain features characteristic, on the one hand, of acute mania, and on the other, of dementia.

**GENERAL CONSIDERATIONS.**

Individual cases will be presented later illustrating different forms of maniacal excitement and disturbance, but a general consideration of the principal features, mental and physical, of the maniacal state may not be out of place at present. The subject of mania exhibits a pathological departure from his normal personality. There is a disturbance of the normal
relations existing between his senses, his emotions and his will. The balance between them is upset. There is a rise in self-consciousness, but the emotional tone of this rise of self-consciousness in mania is the opposite of that which occurs in melancholia. In mania there is a general sense of well-being: the patient is exuberantly happy, or tirelessly active, or hilariously friendly and communicative. His personal sense of bien-être is so strong and the sensations that reach him from without are so vividly coloured by it that he is incapable of appreciating the different state of others. All his mental processes are quickened and enlivened: the flow of his thought is rapid: objects and events that in his normal state would make no impression upon his consciousness now provoke him to foolish impulsive actions, and incessant and incoherent and irrelevant speech. He cannot be at rest. His power of control is gone. He cannot fix his attention upon any one object. Serial thought is impossible to him. His attention may be caught for a moment, and he may begin to speak sensibly enough about himself, but a fly lights on the window pane, or a horse is driven past the window or some one else makes a remark, and at once the thread of his discourse is interrupted and a regular spate of speech ensues, words and sentences following upon one another in a rushing torrent of incoherent rambling.
The intellectual factors are enfeebled. The normal working of the processes involved in the association of ideas is abrogated or entirely suspended. Instinctive and automatic actions take the place of reasoned conduct. The maniac exhibits a failure to rightly appreciate the value or meaning or purpose of objects with which in his normal state of mind he had been perfectly familiar. The perception that his consciousness has of them is perverted. A chamber-pot suggests the idea of a hat to him, and is at once placed upon his head, though it may contain his own dejecta. A ragged and soiled piece of cloth, or a battered and tarnished button or a piece of coloured glass, may possess in his mind the value of a silk handkerchief or a Victoria Cross or a Cullinan diamond. The maniac will cheerfully and unconcernedly tear up blanket after blanket and sheet after sheet, and explain with the greatest equanimity that he is going to make cushions or mats of them. If asked not to tear any more, he will obligingly say that he will not, but his consciousness is in such a state of constant flux that his promise is barely made before it is obliterated, and succeeding blankets and sheets meet the same fate. The delusions of the maniac in this early and excited stage of the disease are fleeting and numerous. The only thing that appears to be consistently present is the constant restlessness,
the ceaseless flux and reflux of all his mental activities.

Environment in certain states of maniacal excitement is an important factor. During the hours of daylight, when the maniac is surrounded by many objects that distract his attention, and keep him in restless and purposeless activity and when he is susceptible to the influence of routine and discipline and example, there are certain bounds set to the extent of his subject-consciousness. In the darkness of night, however, when he may be secluded in a room by himself, when stimuli cease to reach his consciousness through the channels of sight and hearing, there is no limit to the rise of his self-consciousness, and as the mental turmoil continues with no diversion from outside to change its course or character, the maniac indulges in sustained and noisy excitement. He will sing at the pitch of his voice for hours: will cheerfully hammer with his fists or his heels on the door: will march incessantly round and round or across his room: will hold long conversations with imaginary people or otherwise find an outlet for the exuberant and irrepressible activities of his disordered brain.

The special senses in the case of a certain number of those suffering from mania become extraordinarily acute. The senses most markedly affected in this
manner are those of hearing, sight and smell. This increased morbid susceptibility to sensory stimuli from without tends to greatly complicate the symptoms of mania. Attention is much more readily disturbed, and the maniac, instead of being able to benefit through the heightened delicacy of his channels of perception, is indeed the loser through them, for his powers of selection and co-ordination and concentration are quite inadequate.

CLOUSTON (Mental Diseases: Sixth Edition, 1906) mentions the case of a man who required to use highly magnifying spectacles but who was able to do without them, and even to be able to read small print, when passing through an attack of simple mania. He also mentions the case of another patient who, as the morbid brain excitement gradually passed away, had to use spectacles of greater and greater magnifying power.
ETIOLOGY.

The causation of insanity is an extremely complex and difficult question, alike in its more general aspects and in its particulars and details. The etiology of mania is a subject that may be considered as almost co-extensive with the causation of insanity, and as presenting equal difficulties. The manifestations of mania are so numerous and varied, its symptoms are to be found so widely among the insane of all ages, that a full description of the causes of mania would to a great extent serve as an account of the factors concerned in the causation of insanity.

It is probably the case that in all forms of acquired insanity we have to do with two main factors as regards causation. These are, firstly, a defective or vitiated nervous organization of the individual, and, secondly, the influence of environment as manifested in external stress, such as over-anxiety and worry, or in different forms of infection and intoxication. Under these two principal groups, however, it is necessary to include a very extensive and widely differing series of contributing causes.

HEREDITY.

Though on many points the followers of the opposed schools of DARWIN and WEISSMAN are at variance, it is
admitted by all students of the problems of heredity that there is transmission of ancestral characters. As in the case of tuberculosis, however, in which what is transmitted is not so much the actual disease, as a special predisposition and liability to become affected by the disease, so in the case of insanity, the pathological inheritance is not that of any one form of mental disease, but rather a defective nervous constitution which, in the presence of certain circumstances, may expose its possessor to the onset of a mental attack. This is the insane diathesis. There is this further point, however, to be noted in connection with this matter. It has now been established that in place of a direct hereditary predisposition to mental disturbance there may be a collateral or indirect heredity. It is not as a rule the special pathological characters themselves that are transmitted, but a predisposition which is capable of engendering under influences unfavourable to the individual diseases of very different appearances. Thus the insane diathesis is closely allied to the rheumatic diathesis, the tubercular diathesis, the gouty diathesis.

There is at present a female patient under my care who herself suffers from suicidal melancholia with most distressing delusions, and phthisis, whose family history is riddled by cases of epilepsy, tubercular disease and
MACPHERSON (Mental Affections 1899) states that "Most writers on mental disease admit as a predisposing cause in almost all cases of circular insanity, heredity or a morbid brain constitution in from 80 to 90 per cent of melancholias, while with regard to mania, it must be admitted that the same unanimity does not prevail, although recurrent mania is generally placed in this respect in the same category as circular insanity. The lowest average estimate of hereditary predisposition in mania, as given by most British authorities, may be stated as between 40 and 60 per cent."

The influence of CIVILISATION as a factor in the causation of insanity, and accordingly of mania, the manifestations of which are responsible for so large a proportion of insanity, cannot, in the absence of scientific and reliable data, be accurately estimated. It has been stated that the negroes of the United States of America were remarkably free from insanity in their earlier and more primitive conditions. With altered circumstances, however, and more artificial conditions of living, that immunity is stated to have disappeared, and negroes are now to be found crowding the asylums of the United States. It appears that when a savage race comes into contact with modern civilisation, insanity tends to rapidly increase among the savages. The
question as to the extent and degree of insanity among savage races who have not been brought into contact with Western civilisation - certainly the number of such is now not large - is highly complicated. The standard of mental capacity and sanity differs in the savage and the Western European. The absence of statistics among uncivilized nations renders comparison as to the actual incidence of insanity impossible, and it is probable that many forms of mental disturbance, which by us would be regarded as indicating insanity, would not be recognized as such by savages. The spread of insanity among primitive races who have recently been brought into contact with Western civilisation is more readily understood. Civilisation has its vices and defects, as well as its virtues and benefits. Alcoholism, syphilis, tuberculosis and other pathological processes become veritable plagues and scourges when they fall upon primitive and uncivilized peoples, and those whom they do not kill are apt to develop in themselves or to transmit to their successors various forms of mental and nervous disorder.

EMOTIONS.

Religious and political movements, which may awake strong emotions and passions that serve only to strengthen and stimulate the strong-minded, but are too
unsetting for the feeble and unstable, must not be lost sight of as possible causes of insanity.

Fault has been found with EDUCATION, or at least with our modern ideas and methods of education, and responsibility ascribed to it as a cause of insanity.

With regard to the question of SEX, it will generally be found that the number of female patients in an asylum is greater than that of the male, but it does not follow from this that insanity is more common among women than among men. The opposite indeed appears to be the case. Notwithstanding the preponderance, as a rule, of females in the general population, it has been found that there is a decided excess of men in the numbers admitted into asylums over a given period (THURMAN, statistics of Insanity 1844).

Under the heading 'MORAL AND PHYSICAL CAUSES' it is possible to enumerate, and to a certain extent to classify, the great majority of the contributing or exciting causes of insanity and more particularly of mania. The following table represents the findings of the English Commissioners in Lunacy, on the question of Causation, during the five years 1892-1896.

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<td>2.0</td>
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<td>9.3</td>
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</table>
These figures show the percentage, to the yearly average number of patients in the private and pauper classes admitted, of the different assumed 'causes' of the mental attack. It is evident, upon slight consideration, that there is much overlapping of 'causes'. The distinction between 'Domestic Trouble', 'Adverse Circumstances' and 'Anxiety and Worry' is necessarily a very arbitrary one. When 'Intemperance in Drink' is stated as a cause of Insanity by one authority, it is always necessary to remember that by another authority it may be regarded, in the same case, not as a cause, but as a symptom, of the mental attack. Similarly, masturbation, according to some authorities, ought in the great majority of cases to be considered as a symptom of mental disease, or, at least, of moral and mental unsoundness, rather than as a cause in itself of insanity. It is not very obvious why in the above table 'fevers' are distinguished from 'bodily diseases', and while the term 'sexual' causes conveys no very definite meaning, and 'venereal' probably means syphilis, sexual excitement itself may have been a symptom of insanity and at the same time the cause of syphilis.

The whole problem of the causation of insanity, in addition to the absence of accurate, extensive and reliable scientific data upon the subject, is beset by this difficulty as to the definition of the meaning of
As regards the correctness of considering such conditions as WORRY, ANXIETY, REMORSE, LOVE AFFAIRS and the like as causes of insanity, the present tendency is rather towards regarding them as producing their effects mainly through the metabolic changes associated with them, which lead to various forms of auto-intoxication.

This toxaemic view of the causation of many of the forms of insanity is steadily gaining ground both in this country and on the Continent. In Scotland the names most intimately associated with it are those of FORD ROBERTSON, BRUCE and McRAE. In England much work has been done by MOTT and his assistants in the Laboratory of the Metropolitan Asylums Board, and also by ORR and ROWS whose recent researches into the pathology of locomotor ataxia have attracted much attention. On the Continent, CENNI, LUGARO and MARINESCO in Italy, van GENUCHTEN in Germany, and RAMON y CAHAL in Spain are outstanding names in a steadily increasing array of workers.

The various toxic agents that may be regarded as determining the occurrence of certain forms of insanity may be (1) introduced from without, (2) formed within the body, either as the result of the introduction of pathogenic micro-organisms, or of faulty processes of bodily metabolism. As an example of the first variety,
perhaps the most obvious is alcoholic insanity. Acute mania and general paralysis are by some authorities stated to be due to the invasion by micro-organisms, in the case of the former, of the blood stream, and in the case of the latter, of various mucous membranes and thence of the lymphatic system. Among the insanities supposed to be due to faulty processes of metabolism are the phryoid psychoses - myxoedema, endemic and sporadic cretininism, and exophthalmic goitre (TANZI: Trattato delle Malattie Mentali).

FORD ROBERTSON (Article, Pathology of Insanity, Encyclopedia Medica) writes as follows regarding the methods of actions of such toxic factors as have been indicated above.

"As normal mental action is solely the expression of the functional activity of certain neurons or nerve-cells within the brain, the toxic agents which determine the occurrence of mental disease can do so only in consequence of some injurious influence which they have upon these neurons. This injurious influence may be exerted either directly or indirectly. In the former case the poisons are carried to the nerve cells by the blood-stream, or, more rarely, generated in the lymph by which these tissue-elements are bathed. They produce their indirect influence in various different ways. They may set up morbid changes in the walls of the
cerebral blood-vessels, in consequence of which the nutrition of the nerve cells is affected; they may cause general anaemia, with a similar result; it is probable, also, that they are capable of producing disorders of the cerebral circulation, more especially general or local active congestion, which likewise may disturb the functional activity of the nerve cells; and, finally, they may cause structural changes in the walls of the channels which convey away the cerebro spinal fluid, in consequence of which the outflow of this fluid is obstructed, the lymphatic circulation of the brain is deranged, and the lymph becomes charged with the waste products of metabolism which poison the cerebral tissues."

If we grant the correctness of the statement that the "toxic agents which determine the occurrence of mental disease can do so only in consequence of some injurious influence which they have upon these neurons", all the rest is plain sailing. There can, however, be no direct proof that there is such a toxic basis for certain forms of insanity, because the only satisfactory and irrefutable proof would be the experimental production of morbid mental states by toxines, and that is impossible. The toxic theory, moreover, does not seem to meet the case of those uncommon, certainly, but recognized cases of mental disease in which a sudden and severe emotional shock, or explosion of passion, has
been directly and immediately followed by some form of insanity which may, nevertheless, when fully developed, present all the features of the so-called toxic acute confusional insanity.

In connection with this subject, I am induced to give my impression, though I cannot give my authority for it, that it has been found by workers in psychological research that the bodily secretions such as sweat, saliva, urine and the blood itself, are altered in various ways through what are, to all appearance, entirely emotional causes, such as intense terror, anger, and the like. Such cases may be regarded as analogous to those, more popularly recorded, of the man whose hair turned gray or white in a night, or who lost his voice and remained ever afterwards dumb, after having seen what he took to be a ghost. They illustrate, however, the possibility, and even the probability, of emotional causes producing immediate and more or less permanent mental disturbances. In such cases as these, in my opinion, the proved presence of micro-organisms or toxins would not be sufficient ground for assuming that the basis of the mental disturbance was toxic. Such cases however are, relatively, very few, and the constant presence of the signs of toxaemia which can be recognized in so many forms of insanity, and, more important still, the marked improvement that so
frequently shows itself in the mental condition, when suitable means have been adopted to combat and remove the toxaemia, serve to show that there must be a very intimate connection between the presence of toxic states and the occurrence of mental disturbance. If we accept this view regarding the toxaemic nature of mental diseases, it is easy to explain how the purely mental symptoms may vary in closely allied cases. There is, in the first place, the individual reaction to the same toxin; and secondly, the fact that in many cases the toxaemia is a mixed toxaemia. As in health no two brains act alike, it cannot be expected that in diseased conditions any two brains will react in exactly the same way to the same disturbing factor.

**CLASSIFICATION.**

While the preceding remarks refer more generally to the etiology of insanity as a whole, they may be, more particularly, applied to the etiology of mania, or, more correctly, to the etiology of the very numerous forms of mental disease in which maniacal disturbance is a constant or frequent feature. The classification of mental diseases is a problem which many authorities have attempted to solve, with more or less success.

The following classification by TANZI (Trattato delle Malattie Mentali) seems to me the most scientific and
practically satisfactory that I have yet encountered, and I reproduce it here in order to indicate that many of the varieties and forms of mental disease it sets forth, exhibit, more or less prominently and constantly, signs of maniacal excitement. In TANZI'S scheme there is a progressive passage from the distinctly external and accidental causes of mental disease to the more constitutional and intimate causes, but the transition is such that only the very latest-mentioned diseases (which are anomalies rather than diseases) can be said to be absolutely degenerations.

1. Pellagra.

2. Alcoholism.

3. Morphinism, cocainism.

4. Amentia (hallucinatory. (hallucinatory.
   (apathetic. (apathetic.
   (Acute confusional (mild (acute (Acute confusional (mild (acute
   insanity). (systematized (insanity). (systematized
   (very severe (very severe
   (acute delirium). (acute delirium).

5. Uraemic psychoses.

6. Thyroid psychoses (cretinism (acquired (cretinism (acquired
   (en-demic and (en-demic and
   (sporadic). (sporadic).
   (exophthalmic (exophthalmic
   (goitre. (goitre.

7. General paralysis.
In the above classification mania, as a term descriptive of a particular form of mental disease, is mentioned but once, namely, as one of the three varieties of the affective psychoses. In the meaning of the term, however, as it is used for the purposes of this thesis, mania, in some form or other, may be associated with perhaps every one of the twenty-two forms of mental
disease mentioned, with the exception of melancholia. It is thus fully apparent, as stated in the early part of this section, that the etiology of mania is practically co-extensive with the etiology of insanity.

In the article already referred to (Pathology of Insanity, Encyclopedia Medica), FORD ROBERTSON states that in acute insanities there is always hyperaemia of the cerebral cortex, but proceeds also to state that there are the strongest reasons for believing that such cerebral hyperaemia in mental diseases is essentially only a part of a complex pathological process, and that it is not in itself a primary cause of the cerebral disorder.

The cerebral hyperaemia of senile mania or, more properly, senile dementia, is in the great majority of cases due to atheromatous changes in the cerebral vessels, and it is common to find that particular areas of the brain are specially affected by it.

A consideration of the etiology of mania which left out of account the manic-depressive psychosis of KRAEPELIN would be incomplete, and accordingly the following remarks may here be offered regarding it. According to KRAEPELIN, mania and melancholia do not constitute two acute and distinct diseases, but compose one chronic, constitutional and single disease, presenting two different aspects. The cases of melancholia and mania
that occur with one single isolated attack he regards for the most part as episodes in the course of dementia praecox. KRAEPELIN describes three varieties of his manic-depressive insanity, the melancholic, the maniacal and the mixed. There is, however, according to TANZI, this distinction to be drawn between the maniacal and the melancholic cases: the maniacal cases are as a rule recurrent, but in a considerable number of the melancholic cases the attack of mental depression is not reproduced. In such cases the melancholia ought not to be moved from its place among the acute psychoses nor classified among the forms of disease due to some internal (constitutional) cause, nor confused with the periodic and mixed forms. TANZI considers that pure cases of mania, differing in this respect from melancholia, are very liable to recurrence and are perhaps dependent upon an internal diathesis, and that the circular psychoses, with classical alternations of melancholia and mania, may frequently assume the mixed form or that of the manic-depressive psychosis. This tendency to appear in a mixed form does not, however, in his opinion, destroy the individual character of two psychoses which are so different in their syndromes, and so often incompatible in the same personality, as melancholia and mania.

A statistical enquiry, by GUCCI, into 1123 cases of melancholia, mania, and manic-depressive insanity admitted
into the asylum at Florence from 1844 to 1898 shows that 423 cases relapsed with maniacal symptoms on each occasion, 498 with melancholic symptoms, and 202 only with both maniacal and melancholic symptoms. Thus there were 921 cases in which the same and identical morbid syndrome was repeated, as against 202 cases in which the two syndromes were mingled.

We are thus led to the conclusion that there is a melancholic diathesis, that there is also a maniacal diathesis, and that the association of the two diatheses is more or less frequent, but is certainly not usual. With regard to melancholia, it may occur also in acute form, as a single attack, being due to some external cause, and being thus independent of any diathesis. Mania, on the other hand, has a more decisively constitutional character.

In conclusion, it may perhaps be stated that, in the present state of our knowledge, the question as to the pathogenesis of mania does not possess more than a theoretical interest. The causes that appear to give rise to maniacal symptoms are very largely the causes that also give rise to melancholic symptoms. Whether in one particular individual the disturbance will be maniacal or melancholic appears to depend very much upon the individual constitution or diathesis.
MORBID ANATOMY.

The study of the morbid anatomy of mental diseases may be considered as primarily concerned with the cerebral cortex, which is the essential seat of the psychological processes and therefore of changes in these processes. Despite, however, the recent great advances that have been made in the microscopical examination of nerve cells and nerve fibres, and the demonstrated occurrence of certain pathological changes in them, it is only to an extremely limited extent that it has been possible hitherto even to suggest any consistent relation between the state of the cortical cells and fibres and the manifestations of the mental disturbance. The present tendency of investigators in this field of research is rather to devote their attention to extracortical and extra-cerebral lesions. From the clinical point of view, accordingly, more may be hoped for from the study of pathological conditions occurring in the blood, or in the viscera, as such study will in all probability ultimately reveal the source of the pathological actions that have disturbed the brain.

The origin of a psychosis is often to be sought for in the blood or blood-vessels or the kidneys or thyroid. Morbid changes in the intestine or heart or lungs or liver may aid in the elucidation of the less
evident or extremely obscure lesions of the cerebral cortex, as in the case of alcoholic insanity, epilepsy and acute confusional insanity in which the psychical symptoms are due to disturbances of a functional nature or to relatively slight and curable lesions.

In the investigation of actual cytological changes in the cortex, progress has been dependent mainly upon the methods of NISSI, GOLGI, WEIGERT and MARCHI. NISSI'S method, by demonstrating various details of the nerve cell, has enabled us to complete and correct the observations made by less recent methods, and at the same time has opened up the way for new researches, especially in the field of experimental pathology. GOLGI'S method has been of special value in demonstrating the morphological complexity of normal neurons and also the complex nature of the functional and anatomical relations normally existing between nerve cells and fibres. While the method of WEIGERT reveals degenerative and destructive processes only in a negative form, the method of MARCHI shows the process of secondary degeneration in a positive form and in an early phase.

Morbid changes in the cortical cells have been classified as primary and secondary degenerations (Ford Robertson, loc. cit.). The primary degenerations are held to be due to the action of various toxic substances. Secondary degenerations are due to injury to the axis
cylinder. In primary degeneration the changes vary considerably in accordance with the toxin present and the intensity of its action. In general, the condition manifests itself first by disintegration of the chromophil substance of the protoplasm (chromatolysis) and afterwards by disintegration of the fibrils, degeneration of the nucleus, and death of the whole element. If the alteration does not proceed further than the simple chromatolysis, it may be recovered from. In secondary degeneration the alteration begins with disintegration of the chromophil substance in the neighbourhood of the cone of origin of the axon, and gradually extends to the rest of the cell-body. At an advanced stage the nucleus is often displaced to the periphery, and the primitive fibrils of the protoplasm destroyed. The cell may undergo repair, or it may atrophy and disappear. The antagonism of the symptoms associated with mania and melancholia does not correspond to any proved antagonism of the causes concerned, and it is probable that the cause of both is one and single, and consists in a disturbance of the bodily metabolism. The degree of this disturbance, plus the personal diathesis of the patient, determines the degree of the psychopathy and the nature of its reaction, either in the direction of mania or in that of melancholia.
The intensity of the toxic agent may vary, and thus variations in the degree, and changes in the quality, of the reaction may be caused. The personal diathesis, also, is not necessarily immutable, but is subject to more or less wide oscillations, and may even proceed to complete inversion. It is thus amply apparent that very great difficulties must attend any attempt to correlate the character of the mental symptoms to the organic and material changes that may be found to be present in the nerve cells of the cerebral cortex.

In this sense, no distinction can at present be drawn between the pathological conditions found in the cells of the cortex in a case of mania or of melancholia. Microscopical examination of the cortex of a case of general paralysis in an advanced stage of the disease could not possibly enable us to tell whether the patient during life had been of the excited and maniacal, or apathetic and melancholic, type of the disease.

The probable and immediate cause of the maniacal disturbance is the presence of a morbid agent in the blood or lymph streams which irritates the cortical centres, awakening latent activities and exaggerating ordinary activities. When the morbid agent is more intense, it may be the case that, while preserving its exciting influence upon certain processes, it acquires a paralysing effect upon others.
BRUCE (Studies in Clinical Psychiatry) states that acute mania (maniacal excitement with confusion) excited melancholia, folie circulaire and other forms of mental disease are bacterial infections. This generalization is based upon Bruce's own observations, which are shortly as follows:

1. In all cases there occurs in the blood a "polymorphonuclear hyperleucocytosis," the polynuclears rising above the normal maximum of 10,000 perc.mm. to 30,000 or more, and the polynuclear percentage from the normal 70 per cent to 80 or 90 per cent. In acute mania the polynuclears are high at the onset of the attack, reach their maximum at its height, then fall; but if recovery occurs, rise again to a high level which is generally maintained even after recovery; in acute mania the eosinophiles are usually low at the onset and height of the attack, but rise and remain high, amounting to eosinophilia, if recovery occurs.

2. Positive evidence of the presence of bacteria in the blood of patients suffering from the above-mentioned diseases was obtained in only two instances - one, a case of acute mania in a typhoid state, gave a pure growth of a small streptococcus, and the other, a case of katatonia, also yielded a streptococcus somewhat larger.

3. Frequently agglutinins to these streptococci
are present in the blood sera of such patients, these bacterial agglutinins not being present in the control serums used. Bruce does not consider it necessary for the organisms of these bacterial infections to effect a lodgement in the tissues of the host in order to produce agglutinins in the blood serum and adduces evidence in favour of the production of the agglutinins in the gastro-intestinal canal, and apparently by digestion of the bacteria themselves.

4. Bruce also states that the sera of patients suffering from the aforesaid insanities (with the exception of general paralysis) contain also a substance which agglutinates the red cells of normal blood, but not the red blood-corpuscles of the affected individual himself, nor does this substance in the serum of a patient suffering from any one of these diseases agglutinate the red cells of another person suffering from any of the other diseases of this group.

More detailed reference will be made to the bacteriology and haematology of the subject when dealing with the acute variety of mania, which, indeed, is the only form of mania, of which Bruce, working from the pathological and not the symptomatological point of view, is inclined to admit the existence as a distinct entity.

A general consideration of the question of the morbid anatomy of mania, in the light of our present
knowledge upon the subject, seems to point to the following conclusions:

1. There are many episodes, described as maniacal, such as kleptomania, pyromania and the like, in the case of which there is no reason to believe that any special and characteristic morbid anatomy exists. These disturbances are probably more of the nature of moral perversions, and are more dependent upon the personal diathesis of the individual than upon any other factor.

2. Apart from the history and clinical observation of cases during life, there is nothing sufficiently distinctive in the results of post-mortem examination, either of cerebral or extra-cerebral tissues, to enable the pathologist to say that such and such a case was one of mania.

3. The changes described as occurring in primary degeneration of the nerve cells are not to be found only in cases of insanity. They occur also in various acute febrile disturbances, and may be produced experimentally by such conditions as hyperthermia. It cannot at present be said that we possess any distinctive cellular pathology of mania.

4. The extra-cerebral morbid conditions that have been met with, and may be associated with, the various manifestations of maniacal excitement are so varied and so indefinite that it is practically impossible to trace any causal relationship between them and the mental symptoms.
SYMPTOMATOLOGY.

A complete statement or a full description of all the symptoms, mental and physical, that have been observed to be present in the different manifestations of mania would be a magnum opus in itself. In the following pages I shall attempt to mention and describe the more important of them, and to furnish illustrations from clinical records of cases that have come under my own care and observation.

As has already been indicated in the remarks upon the Morbid Anatomy of Mania, in the majority of its manifestations we are unable to point to any characteristic and diagnostic pathological condition. Similarly, in a description of the symptoms of mania, it is very often impossible to trace any definite relation between the bodily condition and the mental state. Whereas, however, the mental manifestations of mania are very varied and numerous, and often indicate, in very impressive and striking ways, a marked departure from the normal, while the physical changes are not so distinctive, in a description of the symptoms of mania, first place must be given to the mental disturbances. This consideration will be given effect to in the introduction of illustrative cases, which will be referred to primarily from the mental point of view.
The conduct, speech, and ideas of the maniac are, practically, of greater importance, both to society and to the asylum physician, than are the physical conditions associated with them. It is possible that further pathological research may so increase our knowledge that a change of view upon this subject may become necessary, but for the present I believe that the above statement will hold good. The manifestations of mania are expansive, centrifugal and inordinate, and the subject of mania is therefore bound to come into conflict with, and transgress, the customary limitations of the society of which he is a member.

In psychological terms it may be stated thus: the man in possession of his senses must rule out of court all subjective images that are extraneous to the line of argument, and reject, as soon as the reasoning process has begun, all new and non-pertinent stimuli that may reach him from without. The maniac, on the other hand, abandons himself to any fortuitous impression, and is never capable of attentively following a fixed current of ideas. In mania, passive attention is stronger than active attention.

In the normal state, logical associations are formed by means of a subtle process of elimination and selection which is the very antithesis of the ideorrhoea
maniaca. The exuberance of thought, speech and action in the maniac resemble those of early intoxication, but they end by encumbering and diminishing the extent of the field of useful activity or logical thought. Cerebral activity, alike in certain of its motor, sensory and intellectual manifestations, becomes more intense and more complex.

BEVAN LEWIS (Text book of Mental Diseases, 1899) lays stress upon the failure in object-consciousness and the rise in subject-consciousness which the two states of mental depression and mental exaltation both exhibit; but in melancholia there is "the grim foreboding of coming evil, the gloomy aspect of the present, the sorrows of the past, the sense of the subject's helplessness before an encroaching and malign environment, whereas in mania there is a general sense of well-being, exuberant joy, excessive hilarity, an overflowing of the spirits in generous impulses, an egotistic self-confidence." Lewis observes that in maniacal states the patient is brought to a more or less automatic or instinctive level, that the animal passions and instinctive desires show an unregulated activity leading to impulsiveness of conduct, and that it is this instinctive level to which maniacal reductions attain that characterizes the features of mania as contrasted with melancholia.

MAURICE CRAIG (Psychological Medicine, 1905) writes
that STODDART has drawn attention to a marked difference in the movements of persons suffering from mania as compared with those of the melancholic. He has pointed out that the maniac's movements are chiefly from the large joints while those of the melancholic are principally connected with the fingers and smaller joints. This observation, when considered with the microkinesis of infancy, shows how strong a relationship exists between the movements in the early stages of evolution and those of dissolution.

When considering the subject of ETIOLOGY, special stress was laid upon the importance of the individual diathesis as a factor in determining the particular emotional tone of the mental disturbance. In the same way, the disposition or temperament of the individual must be considered when dealing with the question of morbid mental exaltation or excitement.

CLOUDSTON (Mental Diseases 1904) states that mental exaltation is perfectly natural in childhood. It is, he says, in fact, the physiological state of brain at that period. Hence, whenever the temperature of the brain rises, from febrile disorders, in children, we are apt to have delirious mental exaltation. The observation is of interest, from the evolutionary point of view, and lends support to the statement of BEVAN LEWIS (Text book of Mental Diseases) that mania is far more prevalent
than other forms of insanity amongst the less civilised races of mankind; thus, the percentage of mania amongst the Kaffir race is given at 67, and melancholia is distinctly rare, and not acute.

GREENLEES (Journal of Mental Science, vol. XLI., p. 72) writes: "If we consider the theories of those who maintain that while mania represents a loss of the lower developed strata of the mental organism, melancholia indicates an absence of the higher and latest developed strata, then this prevalence of mania amongst natives of low-developed brain-functions goes far to prove this theory."

States of mental exaltation may be considered to be normal and physiological in certain circumstances. The neurotic but sanguine individual, who is much of an idealist, may seem to be constantly building castles in the air to his less hopeful and more materialistic companions, but his state of optimism and general sense of well-being must be regarded as his normal and physiological condition. They would, however, be considered to be unusual and morbid were they to develop in one of more sober and common habit of mind.

The speech of the patient who suffers from a relatively simple and mild attack of mania is prolix and diffuse: it may abound in common-places and trivialities. Sometimes it exhibits a brilliancy of thought,
a keenness of wit and a faculty of imagination for the existence of which there had previously been no evidence, but more commonly it tends to be inconsequent and irrelevant. Association by verbal similarity tends gradually to predominate over association by logical affinity. In the more advanced degrees of maniacal disturbance, speech becomes incoherent, and in conditions of acute excitement, consecutive speech of any nature is abolished, and the patient may loudly vociferate or ejaculate single words or inarticulate sounds and generally give evidence of a chaotic state of cerebral and mental dissociation.

From incessant and irrepessible speech the voice may become hoarse, but, in my experience, this is not a common occurrence, and, as a rule, the subjects of mania display a power of endurance of their vocal organs that is obviously pathological, and is perhaps to be attributed to the absence of the sense of fatigue. Certain cases also are characterized by an excessive secretion of saliva, - scialorrhea, - which may perhaps aid in preventing hoarseness and loss of voice, though the patients also may make use of it for offensive or abusive purposes.

The physiognomy of the maniacal patient is mobile, and generally tends to exhibit the condition of hypermimia. In some cases abnormal tenseness of the levator palpebrae superioris muscle may expose the white rim of
the sclerotic above the iris, giving an angry or erotic expression. This condition is extremely well shown in two female patients who are at present under my care.

1. Mrs W., aged 45, admitted two years ago suffering from delusional mania. She insists that she is the Duchess of Clarence and behaves in a most arrogant and supercilious manner towards all members of the staff, nursing and medical. When in an imperious mood, the maniacal gleam of her eye is very prominent and striking.

2. Mrs H., aged 26, admitted two years ago as a case of insanity of pregnancy (7 months). She was then in a state of acute mania and showed no improvement after delivery which took place more than 14 months ago. Since then, she has been continually in a state of restless, noisy, impulsive and destructive excitement. At times she becomes markedly erotic, when her pupils become widely dilated and the whites of her eyes very distinct and wide.

Alterations and irregularities in the general coen-asthesia render the maniacal patient capricious in his eating and drinking, and may make him equally inclined to abstinence or excess. In the same way, the interrupted quality of attention exercises a very marked influence upon sensibility, especially to pain. On account of the disattention, the patient seems to be affected by analgesia. This feature is well illustrated by the readiness with which patients in an acutely maniacal condition will submit themselves to surgical and dental operations that in ordinary states would cause intense pain and necessitate the use of an anaesthetic.
Mrs S., aged 35, admitted in a state of acute mania, gave no evidence of feeling any pain when her gums were being cleared of a large number of carious teeth and decayed roots.

Miss I., aged 68, suffering from chronic mania, appears to feel no pain or discomfort from the presence of a very large sarcomatous growth arising from the pelvis and extending up into the abdomen and downwards into the thigh, where there is at present a rapidly fungating tumour of the size of a large orange.

Absence of the sense of fatigue leads the patient into delusions as to his strength and powers of physical endurance. This is well illustrated in the case of the general paralytic with exalted and grandiose ideas, who will tell you that he can walk 50 miles in a day, whereas he can with difficulty steer an unsteady course between the chair he sits in by day and the bed he occupies at night.

Many of the more prominent and characteristic features of mania are illustrated by the following case which has the additional interest of being that of a medical man who, as recovery gradually took place, recognised not only that he had been ill, but was able to take a professional interest in his own case.

A.B., aged 30. The medical certificates stated that he was in a very restless and excited state, talking incessantly, rambling from one subject to another, had exalted ideas about himself, said that he had "supreme intelligence" and was under "special divine guidance", etc.

No history of hereditary predisposition to insanity was obtained. His temperament was said to have been obstinate and quick tempered. His habits tended to be alcoholic.
His previous health has on the whole been good, but he has suffered from malaria.

The history obtained of his present illness was that for some time he had had a great deal of worry in connection with his practice; a fortnight before admission he had a slight attack of influenza and had been sleeping very badly since: five days before admission he appeared strange, though able to visit his patients, and for the last four days had been restless and much excited, talking incessantly. His appetite had been poor for some time, but for a few days before admission he had eaten ravenously. On admission his temperature was 96.6°F., his pulse rate about 80 and his weight 10 st., 11 lbs. He was well developed and muscular. Appetite was good: tongue coated and slightly tremulous: hard palate rather neurotic in type: pharynx slightly congested: bowels were constipated: heart and lungs were healthy: urine was very pale in colour and showed no deposit: specific gravity 1006: reaction alkaline: no albumen or sugar: the tongue showed slight fibrillar tremors but there was no appreciable tremor in outstretched limbs: pupils were equal in size and regular in outline and reacted to light and accommodation: the knee jerks were exaggerated: the plantar reflex was not elicited.

Mentally he was in a state of great excitement and exaltation. He could not keep still: every trifling occurrence seemed to distract him and change the current of his ideas. He was most complimentary and affable to everybody he met: he visited all the patients in the ward and sang the praises of the doctors and nurses to them. In conversation he was most irrelevant and inconsequent, but also most importunate and pertinacious. He declared himself capable of anything and everything, and was very communicative regarding certain details of his past life. He fully recognized where he was and said that this was the finest institution of its sort in the world. He seemed insensible to fatigue: he spoke for hours on end without a break, and spluttered froth and saliva from his mouth as he spoke.

At night he became more restless: he threatened to break the glass of his door if he did not get tea and an interview with the doctor within three minutes, and was generally
noisy and restless. On the following day he was still very restless and talkative: he insisted upon singing songs and performing tumbling feats for the amusement of the other patients. In the evening, after a vast show of preparation, with calls for silence and innumerable efforts to light his pipe, without which he said he could not work, he wrote the following "thesis" upon mania at my request.
Special Minute of Meeting of the most learned, the Honored and Noble Senate of the Renowned University of Cambridge (renowned not only because of the Rowing Blues — all its honest and most noble work is not surpassed by the record of any rowing team, yet, take heed that it is not surpassed by it.

Present: — The most Worthy President, namely

And all the worthy members excepting those prevented by sick, knees, and duty; the Clerk [Mr. P. Oswald Jollie (he is really acting Clerk for the present)]
The Minutes of last Meeting having been approved of, after being read, the Clerk informed the Said Senate that (with their permission, needless to state) he had received a Communication from one of the Cambridge University Graduates (who has actually been so fortunate as to be taught by Mr. Reid, Superintendent of Royal Asylum for Insane, Aberdeen (the greatest authority on mental disease, so far as known). Said graduate, one Mr. McKenzie, having expressed a said Communication a desire for degree of Doctor of Medicine (M.D. or S.M.) the Clerk Commended to read said thesis sent along with the Communication of said Mr. McKenzie.

At this stage, the Press, seeing
that the clerk was dilating unnecessarily on the thesis. In fact he said to the clerk that he was a tattle-tale, for was talking idle jargon (the Clerk having ordered him to shut up, I took him aside and said 'Aye, I'm no sure but I heard they said he was speaking some minute) and ordered him to merely state the points of importance; the clerk being firmly for such a great honest man to have respect for his hoary (?) head. I also for common sense apologised (apologized) and obeyed orders.

Concentrated Extract of Mr. M. Mc. Kew's Thesis on Mania

(whether liquid or solid — I may add it is also further now a season)
Mania

Varieties. Acute always but it may only occur once to the sufferer; as Dr. Reis has shown me, it is a disease which as a rule breaks in exacerbations.

Habitat. This asylum is one recommended by its great chief.

Pathology. Any pathological study differing with normal into cranial lesion.

1. Injuries of Brain. E.g. Jamma (Rhysona).
2. Cerebral blood drens to Brain of lumbar (headache), etc. etc.
3. Lip of cardiac valve (coarsely) from lithuria.
4. Hemorrhages.
5. Cerebral Haemorrhage.
Inspirissate
Treatise
(Thesis)
upon
that pathological entity
Mania
By
Mr. M'Kenzie
Physician under Dr. Reid at his Asylum for insane (Aberdon)
Scotland 1783
Page Third

Patient Complaint: A great many have to be explained - Clinical, (vide infra)

Physical Signs: The mental & physical of Cambridge University having assured the Clerk that Dr. M.D. is a most learned man, it appears the latter sent having requested a Clinical (how to rogue a cert. University) to have paid cost of calling this special meeting, wrote to be examined by [Said M. W. X, Clerk]. The Clerk to take notes with help of clock & make remarks to a Representative of the University to be present (the applicant has applied to others for M.D. & wishes it before he will allow the premises M.D. (Cambridge) to be confirmed to him.

Prognosis: Life or Death (the brain is just as the other)
Treatment. Freedom - Reward for good
behaviour — Punishment (very gradual)
for misbehaviour — (unpunishment, or exclude little actions)

At this stage a member announced that he had some notice of undue
neighbours that Clerk be dismissed
also tried for certain civilian actions.
The Clerk asked to be left to
so it leave then to latter punishment
at this meeting.

A vote being taken
Daniel Clerk (acting - O.O.) proposed
and it dismissed above. All papers handed over
he to going to accept his pastoral settlement

Communicated by O. Day to the
Assistant from Peter 250.
Thesis

Conceived solely

by

consignor (M.)

Mcenzie

Physician under

Dr. Reid

(The mental doctor)

19 February

MDC
Storm under my hand this nineteenth day of February in the year of our Lord one thousand and sixty-eight.

P. Douglas Poole
The document is a good illustration of the attempts at fantastic arrangement and decoration, the tendency to "punning" and to make use of foreign languages and to philosophize that so frequently characterize the early stages of simple mania. The incapacity for serial thought is shown in the imaginary "Copy of the Minutes of Special Meeting" where the mention of the word Cambridge is followed immediately by a remark upon the 'Rowing Blues' which obviously have nothing to do with the granting of the degree of "Docteur du Medecin." The patient himself in this case had been an oarsman in his under-graduate days. The maniacal incapacity for sustained and equal effort may be seen from a comparison of the character of the handwriting at the beginning of the document and at the end. To begin with, it is clerk-like, well-formed and regular, with various little but neatly executed flourishes, but towards the end it becomes almost an illiterate and illegible scrawl.

The capability, on the other hand, of the delusional maniac - the patient with fixed and more or less consistent ideas of grandeur and power - to sustain a high level of effort is well shown in the two coloured drawings herewith. They are the work of a man, aged 38, who was admitted 7 years ago suffering from delusions of grandeur, e.g., that while in South Africa he released the British Fleet. He is at present a quiet
and peaceable, but most highly exalted patient, who spends almost all his time in drawing such pictures, and in corresponding with Chiefs (imaginary or real) of Army Departments. His literary productions are generally excellent examples of rhyming incoherence, as in the following four lines:

All the way to Chatham that Lion had to Go
Now Cross of Liverpool I suppose you know
Their was the Lion then and me upon the Sun
Human beings through the day at night beasts are Done
Visual illusions are frequently met with in cases of mania such as described above. The explanation of these illusions, which in some cases may appear to be true hallucinations, is probably to be found in the rapidity and precipitancy with which the patient associates fresh impressions from without with pre-existing representations. He may mistake the members of his own family for enemies, or think that he recognises old acquaintances in complete strangers, with whom he will enter into confidential conversation (palingnostic illusion). Hyperacousis is not infrequent; but, instead of enriching the consciousness of the patient, it tends rather to confuse it, since it multiplies occasions for erroneous judgment. It is probably in this manner that verbal illusions arise, by which the patient may believe himself to be insulted and wronged and in response to which he may act violently. It is rare, however, for such illusions to be repeated, and still less common for them to take the form of a systematized delusion, and the true hallucinations which are so characteristic of acute confusional insanity (acute mania) are entirely absent from the clinical picture of simple mania.

**MANIACAL SYMPTOMS IN FOLIE CIRCULAIRE.**

The existence of a distinctly circular or alternating
form of insanity has for long been recognised, and was clearly described by the great Italian anatomist MORGAGNI of Padua (1682-1771) who wrote as follows regarding it: "Melancholiae autem mania in tantum affinis est, ut si affectus saepe vices commutant et alterunt in alterum transeat; quin saepius dubitantes medicos vides hinc taciturnitate et metu, hinc loquacitate et audacia in eodem aegro, subinde alternatis, melancholicum an maniacum pronuncient."

The fatality of the rhythm with which the maniacal phase alternates with the depressed, the striking and abrupt antithesis between the two phases of the disease, and the constancy of their duration combine to make circular insanity one of the most distinctive entities in psychiatry. The patients who suffer from circular insanity possess two personalities, two characters, two methods of living and of regarding life which stand in perfect contrast to one another. Sometimes the two-faced Janus of circular insanity is deeply sculptured on one of its aspects and scarcely marked on the other, but the suddenness of the transition and the consistent character of the depressed or exalted symptoms, however slight these may be, during the entire period of depression or exaltation, does not leave any doubt as to the nature of the disease.

The mental excitement associated with the maniacal
phase of circular insanity is characterized by an absence, as a general rule, of the confusion and dulling of consciousness that are commonly to be found in the other forms of maniacal disturbance (CLOUDSTON, MACPHERSON, BRUCE). There is a general exaltation and hyper-activity of the mental functions, but ideation as a rule is not incoherent, and the special senses are not affected, though their hyperacute state in some cases may simulate hallucinations. General sensibility to pain is not diminished. The memory becomes very acute and retentive. Insignificant events, very frequently of a disagreeable or scandalous nature, are recalled in great detail by the patient. Little consideration is shown for the feelings of others who are freely made the objects of the taunts and derision and wit and capacity for scandal-mongering of the patient. Such a patient will follow the doctor through the ward on his visit, talking incessantly all the time, answering the questions put to other patients, making caustic or witty remarks at the expense of the nurses, offering suggestions as to treatment, and generally making himself or herself as conspicuous and prominent an individual as possible. This intense desire to attract attention seems to me a very characteristic feature of the maniacal phase of folie circulaire. The subject of simple mania may also be restless, garrulous, boastful
and quarrelsome, and may exhibit a similar exaltation of the faculties of memory and attentiveness, but, as a rule, his restlessness and excitement do not seem to lead him to the same thrusting of himself upon those with whom he comes in contact as is to be observed in the subject of circular insanity in its maniacal phase.

The *nisus generativus* in many cases becomes exalted during the period of excitement, but, as a rule, the change does not show itself in its more open or gross forms. The male patient assumes an ultra gallant and sententious manner towards persons of the opposite sex, but the lack of self-control and the perversion of his moral, if not intellectual character, may at once become apparent if he receives any encouragement from the object of his admiration. Female patients often amuse themselves, and scandalize their hearers, by their frank declaration of matrimonial projects for the members of the staff, and by their more or less indelicate hints and innuendoes on matters of entirely personal concern.

The physical symptoms associated with the maniacal phase of *folie circulaire* are not distinctive or important, so far as my personal experience of such cases goes. This is a point upon which authorities differ.

*Macpherson* (Mental Affections) states that during the maniacal attack nutrition is on the whole improved, and that the physical functions, like the mental, are
accelerated and sometimes exaggerated. Constipation is said to be uncommon and cases have been reported in which the bowels tend to be irregular and even loose in their action.

CLOUSTON, (Mental Diseases) on the other hand, writes that the changes in the bodily symptoms are very marked. The patient, when exalted, loses weight; when depressed, he gains weight; the difference in weight between the two periods being often two stones.

BRUCE, who has made exhaustive studies on the condition of the blood in such cases, states that where there are recurrent attacks the leucocytosis at first falls, and the percentage of polymorphonuclear leucocytes also falls, just prior to the onset of the excitement. As the excitement increases the leucocytosis gradually rises, culminates at the height of the excitement, and then gradually falls to normal. The characteristic of the leucocytosis during the acute stage of a first attack, however, is its irregularity and its tendency to fall as the excitement subsides (Clinical Psychiatry).

FALRET (Études Cliniques sur les Maladies Mentales, 1890) has described symptoms of cerebral congestion in a small number of cases during the maniacal period. These are slight loss of consciousness, convulsive movements, and sometimes epileptiform attacks; sometimes slight embarrassment of speech or temporary hemiplegia. The
symptoms are of short duration and disappear with the period of excitement.

The facial expression of the subject of alternating insanity varies very much in the different phases of the disease. In the maniacal phase it is expressive of an exuberant feeling of bien-Être. The eyes are keen and roving. The pupils are dilated and abnormally prompt in their reactions to light and accommodation. The lips are often set in what seems to be a constant smile, and the general expression is one of hilarious jollity, but may quickly be changed into one of anger or pride.

The more prominent features of the maniacal phase of circular insanity are illustrated in the following short notes of cases.

Miss A., aged 49, admitted four years ago, having suffered from two previous attacks. The family history shows a hereditary predisposition to insanity. On admission, she was in an excited and restless condition and was indignant at her removal to the Asylum, regarding which she spoke with great volubility and in very emphatic language. She showed no trace of mental confusion; her faculty of recollection was very prompt and her memory very good. She was extremely talkative, and was restless, and could not employ herself usefully in any way. She was very inquisitive and meddlesome and was quite ready to pick a quarrel with any one who showed any resentment to her advances. She liked to dress herself in a fantastic manner, and would pick up all sorts of rubbish and odds and ends with which to decorate herself. Her voice was extremely harsh and piercing, and she always spoke as if her hearers were almost stone deaf. She exhibited a considerable degree of erotic excitement, not in her conduct,
but in her speech, which was largely tinged with an amorous tone. At night she was often restless and noisy, and appeared to be little benefitted by any hypnotics or sedatives that she could be persuaded to take. Her appetite was very good, almost omnivorous, so much so that at times she suffered from dyspepsia due to over-eating. Her bowels tended to be loose.

Her condition remained as described above for some 3 or 4 months, after which she passed into a state of mental balance and composure which lasted for a few weeks. During this time she was quiet, refined and pleasant: spoke in a low and pleasing tone of voice: occupied herself in fine needlework and generally in speech and conduct behaved in an entirely rational and sociable manner.

Symptoms of depression then appeared, at first in the form of a slight degree of apprehensiveness and timidity. She seemed herself to realize that she was losing her mental balance again and to dread what lay before her. She began to sleep poorly and to complain of indigestion and headache. This period of depression was short, not lasting for more than 10 days or a fortnight, and ended abruptly, to be followed by a lengthy period of excitement during which all the symptoms she had manifested in the attack from which she suffered on admission were reproduced. The complete cycle in her case occupied about 6 months, and has remained almost constant during the four years of her residence in the asylum.

In certain cases the regularity with which the alternative states succeed one another is a very striking feature. This is well illustrated in the following case described by TANZI (Trattato delle Malattie Mentali).

A female idiot, aged 29, for more than 7 years had suffered from attacks of depression and excitement that succeeded each other in the brief period of 48 hours, each attack lasting one day. In the period of exaltation the patient jumped, ran, gesticulated, shouted, sang and tried to divest herself of her clothing, being
all the time dominated by a continuous, intense and irresistible agitation, without however showing any aggressive tendencies. During the period of depression she stood motionless and half asleep, was mournful in appearance and refused food. Occasionally each of the two periods doubled itself in length and lasted for 2 days, but no change became apparent in their reciprocal relations.

Cases have been recorded in which the patients, after passing repeatedly through the various stages of the cycle, come at length to regard the period of exaltation as the normal one. When in the state of mental equilibrium following a period of depression they may recognize and admit the improvement in their condition, but will not believe that it is complete, and may postpone various matters for decision or performance, to the maniacal phase which they look upon as the end and solution of their disease.

**CHRONIC MANIA.**

Chronic mania is that condition in which there is an indefinite continuation of the general symptoms of mania, often in a milder form, but liable to sudden exacerbations of acute excitement, and generally associated with a more or less well marked degree of secondary enfeeblement of mind. All insanities, if not recovered from, tend to dementia, but mania more strongly than most. In chronic mania normal consciousness is impaired but not
abolished or markedly perverted. The patient retains to a certain extent the power of attention, but memory as a rule is enfeebled, and the power of self-control is liable to sudden reductions that reveal themselves in impulsive and explosive conduct.

Restlessness and noisiness and destructive tendencies are characteristic, or supposed to be so, of the chronic maniac, but it is possible that in many of such cases we have to do with faulty or vicious insane habits which may be largely remedied by change of environment, prevention of overcrowding, careful attention to individual patients and gentle but firm checking and preventing of morbid tendencies.

Chronic mania is perhaps the most atypical of all the forms of maniacal disturbance. On the one side there is no hard and fast boundary line to distinguish it from simple or acute mania, and on the other it tends to merge insensibly into states of more or less advanced secondary dementia. Much depends upon the character and personal proclivities of the patient.

Sex is an important factor. So far as my experience goes, I am inclined to think that chronic mania is more common among females than among males, and also that the female subjects of the disease are, as a rule, more noisy, restless, impulsive and destructive than the male. It is possible that this may be accounted
for to a certain extent, by the greater facility that exists for employing male patients in out-door work, in which they are able to work off their superfluous energy, whereas in the case of women who are generally employed within doors, and in closer association with others, such an arrangement is not so practicable.

The morbid changes that are found to be present in cases of chronic mania ought perhaps to be associated rather with the process of progressive dementia that is usually present in such cases than with the maniacal symptoms. It is, however, very common to find thickening of the skull-cap, and increase in its weight, through sub-periosteal formation of bone, in chronic mania. The dura mater is frequently adherent to the inner surface of the skull-cap. The pia arachnoid may exhibit milky opacity, especially along the sulci and in the immediate vicinity of the blood vessels. Chromatolysis is said to be more extensive and intense, as a general rule, in mania than in melancholia.

FORD ROBERTSON and ORR (Journal of Mental Science, 1898) state that they estimated the extent of chromatolysis in cases of acute mania and found that the number of cells affected by chromatolysis was about 50 per cent. in one case, 80 per cent. in another, while in a third case every cell appeared to be involved. In the acute melancholias they found the percentage to be
much lower, being in each about 25 per cent.

Proliferation of the neuroglia, principally in the outermost layer of the cortex immediately beneath the pia, is a well marked change in most cases of long continued excitement.

**MONOMANIA OF GRANDEUR.**

Clinically, it is very rare to find a true and absolute monomania. The patient who labours under a delusion as to his omnipotence or omniscience is very likely to have delusions of persecution and suspicion as well. Monomania is therefore, in the strict meaning of the term, somewhat of a misnomer in the majority of cases, but its use is sanctioned by general consent.

Various forms of monomania have been described, such as

1. Monomania of persecution, suspicion and unseen agency.
2. Monomania of pride and grandeur.
3. Systematized delusional insanity. (CLOUSTON, Mental Diseases).

MAGNAN (Le Déîre chronique à évolution systématique, 1890) divides the affection into the following four stages, as quoted by MACPHERSON (Mental Affections).

1. Period of incubation, characterized by illusion, insane interpretation and mental anxiety.
(2) Stage of persecution, characterized by delusions of persecution, hallucinations of hearing, and of general sensibility.

(3) Stage of ambition, with hallucinations of hearing of an ambitious character, along with delusions of grandeur.

(4) Period of failing intellectual power or dementia.

Of the above four stages, the only one that exhibits a truly maniacal character is the third. Depression and suspicion are the chief characteristics of the first two stages, and the emotional tone of the fourth is rendered indistinct by a gradually progressive enfeeblement of mind.

In the period of exaltation and ambition, the patient gives expression to well defined, systematized and consistently expressed delusions of grandeur, supernatural power, pride, wealth and virtue. The delusions are not transient or incoherent, though they often display a degree of extravagance that argues the commencement of a process of enfeeblement. The patients are generally eminently peaceful and contented people and keep themselves rather apart from the society of other and less favoured mortals, and in some cases behave themselves with a remarkable dignity of deportment and manner. Hallucinations of hearing are commonly present, and in many cases these probably constitute
the starting point of the delusions.

The general features of systematized delusion with hallucinations of hearing are well exemplified in the following case:

A.B., aged 52, was admitted 6 years ago, suffering from hallucinations of hearing and delusions as to his own power and importance.

He is now the "King of Kings" and says he has been so since before the world began. He is able to create worlds by the million, and the contemplation of his more than almighty powers maintains him in an unchanging state of supreme and radiant bliss. He beams with a universal benevolence if questioned as to his powers. If doubt is thrown upon them, he looks in pity more than in anger or scorn upon the sceptic. Sometimes he wears a look of preoccupation, but does not resent being disturbed, and will explain in the most affable and obliging manner that he has been busy controlling the affairs of the Universe or that he has just had a visit from the Almighty who came upon a bicycle. Voices tell him that he is the supreme being and possesses the gift of omnipotence: they also announce to him that millions and millions of worlds are waiting but for his word to spring into being. He keeps himself altogether apart from other patients, and spends the greater part of each day bareheaded in a covered outside passage, on the floor of which he draws mystical figures and writes unintelligible words.

There is a form of maniacal exaltation and delusion to which the term RELIGIOUS MANIA has been applied by some. In many cases it does not seem to be particularly applicable, but the following case seems to me to be of a somewhat unusual nature and to deserve the term.

Miss G., aged 54. The first medical certificate was as follows: "She informs me that the Kingdom of Heaven has come and that she is
waiting for the Bridegroom. I found her stripped of all clothing and withdrew two common pins she had stuck into her skin. She has been strange in her conduct and talk for several days and has delusions, and has frequently stripped herself naked."
The second certificate stated that "She is suffering from a condition of mental exaltation with lofty delusions, believing that she has been chosen as the bride of the lamb. She is confused and at times gets unduly excited."

No history in the case was obtained except that the patient's habits were stated to have been alcoholic at one period of her life, but not for the few years prior to admission.

On admission she was slightly confused. Her memory for recent events was poor. She was in a state of intense religious exaltation declaring in a rapt sort of manner that she had given birth to the Virgin Mary and was to regenerate the world, etc. She occasionally sang a few lines of a hymn in an ecstatic but not noisy or excited way. She spoke of having the vision of a bright light and of hearing a voice from Heaven that spoke to her.

Four days after admission she appeared to be in a trance for several hours. She could not be roused by the nurses to take her breakfast and made no response to any stimulus or appeal, but lay perfectly passive, with her eyes closed, and all the appearance of intense subjective concentration. When movement of her limbs was attempted, she was found to be in a cataleptic state, her arms remaining rigidly as they were placed. At the end of some 4 or 5 hours she opened her eyes, when asked by me to do so, and put down her arms and then said that she had been in a vision, that she had seen the coming end of the world and had passed through the deepest depths, but that all was now to be new. Three weeks after admission, she wrote a letter from which the following is an extract:
"I cannot explain in writing all the circumstances leading up to the climax on Sunday 24th Nov. (the date of her admission to the Asylum) but I seem to be had by a POWER beyond myself. Mr Swan was preaching for two Sundays in November. Your uncle John and I both joined the Church while he was minister. Well, he gave me a text then, "I will hear what God the Lord will speak, for He will speak peace unto his people." He preached from that the first Sunday and both Sundays he seemed speaking to me. On the second Sunday he spoke of the Virgin Mary, how the Roman Catholics exalted her even above Christ, but, he said, did we ever think what the pure maiden had to suffer from the scorn and shame of her friends and the world. Well I was thinking of that in my bedroom that night when I heard a voice beside me but saw no one, and it said "Would you be willing to suffer shame for me?" I just answered involuntarily How could I Lord? but, Are you willing? the voice again said and I answered Lord let thy will be my will and my will thy will. Then I cannot explain but by His Spirit he meant I was to stem the great sin of whoredom and be his Chosen Bride."

From the date of writing this letter, her condition steadily improved, and after a residence of 9 weeks, she was discharged cured. In certain features the case recalls the story of Joan of Arc, and it is possible that had Miss G. lived in the 14th or 15th century, instead of in the 19th and 20th, she might have been burned as a witch or canonized as a saint.

Maniacal episodes, of greater or less duration and severity, are frequent occurrences in the course of such diseases as epilepsy, general paralysis, alcoholic insanity, idiocy and imbecility and also in the insanities of development and decadence. The actual mental symptoms
that may be associated with epilepsy are very various but the general mental state of the epileptic may be said to be almost distinctive. It is characterized by irritability and impulsiveness which may exist in any degree from the merest irritability of temper to most violent and sudden explosions of destructive or homicidal impulse. Other features that are characteristic of epileptics are their religiosity, their tendency to exaggerate trifling ailments and infirmities, their obsequiousness, their hypochondrical self-concern and their marked kindness to one another in many cases. Epileptic mania has a special tendency to assume a furious and impulsive character. As a general rule, this form of epileptic furor, associated with impulsive acts which may be homicidal or destructive in other ways or, less commonly, suicidal, manifests itself after the epileptic seizure. With regard to the medico-legal importance of such cases to medical men and to jurists, CLOUSTON (Mental Diseases) writes as follows:

"It depends much upon the strength and intelligence of the medical evidence whether an epileptic murderer is hanged or sent to a Criminal Lunatic Asylum. If a man has been subject to regular epileptic fits, and commits a murder in an impulsive or motiveless way, then I think the presumption would be very strong that he was not fully responsible for his actions. No prejudice or
want of knowledge on the part of the judges or juries should prevent a medical man from giving clear evidence on this point. A murder by an epileptic should usually be looked on as being as much a symptom of his disease as larceny by a general paralytic. Certainly the onus probandi as to his responsibility should rest on the prosecution."

The condition of blind, utterly unconscious, epileptic furor is well illustrated in the following cases.

A.B., a male, aged 31, admitted 7 years ago at which time he was confused and incoherent and laboured under delusions of a religious nature. For the last five years he has been subject, at intervals of several months, to attacks of extreme epileptic furor which last for several days, these sometimes taking the place of, but more commonly succeeding, a severe bout of ordinary epileptic seizures which ordinarily occur every 3 or 4 weeks.

During the period of epileptic furor, the patient appears to be entirely unconscious of his surroundings: he is wildly excited, tears all clothing to pieces and destroys any movable furniture; he shouts and cries, mews like a cat and barks like a dog, and creeps and leaps like some four-footed animal: he is intensely homicidal in a blind, impulsive sort of a manner: he refuses all food and medicine and appears to be insensible to cold or fatigue or injury, and makes no attempt to save himself, throwing himself recklessly about the room, causing severe bruising and abrasions of head and trunk and limbs. The condition lasts for several days, at the end of which the patient is physically much reduced, and somewhat confused in mind as the excitement passes off, but he rapidly regains his normal condition of mildly demented epileptic contentment and facility, with apparently no proper conception of the condition in which he has so lately been.
A.B., aged 25, was admitted a few months ago in a state of intense confusion and uncontrollable excitement and restlessness. He threw himself wildly about the room, rolling on the floor, struggling violently and shouting very loudly and incoherently. He had been a patient in the Infirmary where he had gone a few days previously in order to have a slight operation on his eyes performed and had omitted to mention that he was an epileptic and had accordingly not continued to take his customary doses of bromide. The attack came on with great abruptness and disappeared almost as suddenly, all signs of mental excitement and confusion having entirely disappeared within four days of admission.

In the ambitious variety of general paralysis, as distinguished from the melancholic and apathetic, a distinctive feeling of bien-être or euphoria generates in the patient, the illusion of a marvellous increase of his muscular power and of his digestive, reproductive and mental functions. Delusions of grandeur and power and wealth are common. The habits and moral character of the patients become changed. As a rule, they become expansive and grandiose in their ideas. They are irritable but also very facile and may thus be easily restored to equanimity. General paralytics, however, at this stage, may suddenly become very violent and correspondingly dangerous, for they show absolutely no regard for consequences and seem to lose all sense of proportion.

Kleptomanical tendencies are very characteristic of the second stage of general paralysis. The patient
will collect and stuff his pockets with all sorts of useless and objectionable articles, most of which he picks up in a foolish, aimless manner, but some of which he obtains by equally foolish, but also sly and deliberate pilfering and petty theft.

The presence of general paralysis may first be announced by the occurrence of an attack of acute maniacal excitement which, in the absence of motor signs, it may be impossible to distinguish from a simple attack of acute mania or an attack of epileptic furor.

CLOUSTON (Mental Diseases) records several such cases which had what appeared to be attacks of ordinary acute mania, and had to all appearance recovered, who had even second attacks and recovered, and then developed the motor symptoms of general paralysis.

A transitory form of mania, associated with alcoholic insanity, of short duration but extreme acuteness, has been described by certain authorities under the term mania a potu. It occasionally follows alcoholic excess in persons of a neurotic or excitable temperament. The condition is characterized by a degree of intense excitement which in many respects resembles epileptic furor. The maniacal attack is sudden in its onset and extreme in its violence, and because of this tendency to the commission of violent and dangerous acts, of which the patient retains only a very
confused recollection, many such cases possess an important medico-legal interest. The impulsive attack may have a suicidal or homicidal nature, or may take such forms as incendiaryism, theft, assault or destruction of property. The condition of the patient suffering from mania a potu differs from that of the subject of delirium tremens in that there is not the same degree of physical prostration in the former as in the latter.

The insanities of adolescence and of old age in many cases provide well marked examples of maniacal disturbance. According to CLOUSTON, the chief characteristics of the mania of adolescent insanity are as follows:

(1) It is often of an acute, though seldom of a delirious type.
(2) It is mostly of short duration, the patients getting soon apparently quite well.
(3) The patients are subject to constant relapses.
(4) In many cases, as the maniacal attack passes off, there is a slight tendency to melancholia.
(5) A strong sexual tinge is manifest in the ideas, emotions, speech and conduct.

Senile insanity has been divided into the three following varieties:
(1) Cases in which there is no evidence of dementia.

(2) Cases in which dementia is present in addition to a psychosis.

(3) Cases in which there is organic disease of the brain.

States of maniacal excitement occurring in old age may have a very important medico-legal aspect. Sexual excitement and perversion may lead to the commission of some offence that may terminate in dishonour a life that had been honourable and honoured.

The following case illustrates well many of the features of senile mania in a patient who shows no distinct evidence of dementia:

A.B., male, aged 72, admitted one year ago when he was excited, rambling and incoherent in his speech and very talkative, somewhat confused and very restless at times. He suffered from delusions of grandeur and wealth, e.g., that he was a champion wrestler and athlete and that his daughter was married to a knight who is worth millions. He was noisy and destructive in his habits at night, turning up and destroying his bed clothes, sometimes singing and shouting, not realizing where he was and constantly mistaking the identity of those about him. His memory for recent events was very defective, but, when his attention could be held sufficiently to test it, his memory for remote and distant events appeared to be good. He often spoke and behaved as if he were engaged in some task of his early manhood and would call out the names of persons with whom he had then been associated.

This state of acute excitement lasted for some 4 or 5 weeks and was then followed by a period of several weeks during which the patient in his speech, conduct and ideas appeared in every way to be entirely sane. He showed no sign of confusion or enfeeblement
of mind and improved much in his physical condition. He then relapsed and again became very restless and talkative and his condition gradually came to resemble the state in which he had been on admission. Some weeks later he again became clear and rational, and has exhibited the same periodic type of insanity during all the time of his confinement in the asylum.

The form of senile insanity in which maniacal manifestations are superimposed on a process of progressive enfeeblement or dementia is more common than the type illustrated by the above case. The age at which senile dementia occurs varies with the mental and physical constitution of the individual. In some cases it occurs as early as fifty years, in others as late as ninety. It is largely dependent upon heredity, vascular changes in the brain, and previous life-history. The symptoms are those of secondary dementia with maniacal disturbances superadded. The patients are restless and confused: their memory is gone: they fail to recognize their surroundings in time or space: they are often noisy and destructive, particularly at night. Indeed it is very often this nocturnal restlessness of the senile dement that leads to his or her removal to an asylum. These features are well illustrated in the following case:

A.R., female, aged 61, admitted one year ago when she was stated to be demented as shown by her loss of memory, her constant talking of nonsense to herself, her inability to understand what was said to her and her untidiness and
faultiness in her habits. There was a history of gradual loss of memory and confusion for three years before admission, with latterly much restlessness and noisy excitement, especially at night.

Her present condition is one of advanced enfeeblement of mind with mild exaltation and excitement. She sits all day in the same attitude on the same chair, aimlessly picking at the hem of her petticoat which is drawn up over her knees, and singing to herself in a low tone, her face expressing a vacant sort of contentment. Physical examination revealed the presence of well marked and premature general senile changes in hair, skin, teeth and gums, eyes, bloodvessels, lungs, etc.

Dipsomania may be defined as a condition characterized by an irresistible and uncontrollable craving for alcohol or other stimulants or narcotics. It is strongly hereditary, and physical and mental signs of degeneracy are usually present in those who are the subjects of it. Between the attacks of dipsomania no alcohol may be taken, and the patient may be a respectable and useful member of society. As the impulse to drink begins to force itself upon his consciousness, he may struggle against it, but unless suitable and timely assistance is given, the irresistible craving for drink carries the day and the patient abandons himself to a period of desperate drinking. The taking of the alcohol or other toxic drug is not the cause of the dipsomania, but is a consequence or complication of it.

During these recurring bouts of drinking, patients seem to lose all moral sense and power of self-control,
and there is no artifice so mean or despicable to which they will not stoop in order to satisfy their craving. The continuation of such attacks leads to a progressive physical and mental deterioration, each attack rendering the patient more liable to another and leaving him always in a weaker and more degraded state.

HOMICIDAL MANIA or HOMICIDAL IMPULSE.

The question of what leads up to or produces impulsive action in the insane is an extremely complex and difficult one. Impulse is defined by MACPHERSON (Mental Affections) as a morbid action or series of actions accomplished by a perfectly conscious individual without, and in spite of, the intervention of the will. If, however, it seems to me, it is a morbid action accomplished in spite of the intervention of the will, it cannot be said to be accomplished without the intervention of the will.

The actual existence of such a thing as an insane and uncontrollable homicidal impulse cannot now be doubted, but the difficulty of defining what is meant by the term and of proving its existence in any particular case, invests the question with great importance from a medico-legal point of view.

The following seems to be a case of uncomplicated homicidal impulse:
A.B., aged 22, a farm labourer, was admitted in a depressed and apathetic condition. He showed no initiative and appeared to be somewhat suspicious. He soon began to engage in outdoor work, and for more than six months continued to do so, working willingly and steadily, but showing no initiative. At no time during all this period was there any manifestation observed of any form of excitement, mental or motor. One morning when returning, to all appearance in his usual state, from the field where he had been working, he suddenly and without any warning, swung a scythe he was carrying round upon an attendant who was walking at his side and inflicted a wound upon his neck which almost instantaneously proved fatal.

When subsequently questioned upon the incident, he expressed no regret for what he had done and could give no reason for his action.

A very similar case is recorded by TANZI in his chapter upon dementia praecox (Trattato delle Malattie Mentali).

A youth of extremely apathetic and listless demeanour, the subject of dementia praecox, killed with one blow his own mother to whom he had always been attached. He could give no explanation of his action, which was in direct contradiction to his habitual gentleness.

If impulse is led up to by obsession, and the sufferer is distressed at what he knows to be a powerful besetment MACPHERSON (Mental Affections), in the two cases quoted above there was nothing at any time observed in the conduct or appearance of the patients to indicate such distress, nor, after the commission of the act, was there any expression of remorse or regret for the deed, such as is said, by the same authority,
to follow its commission.

I think it is possible to take another view of the psychological mechanism of such impulsive acts. Without possessing anything of an obsessive character, the simple idea of performing a certain action may occur to the consciousness of the insane individual. Thus the possession of the scythe and the view of the man's neck, as he walked alongside, may have suggested to the patient whose case is first described, some such idea as 'I wonder if I could cut his head off at one blow?', and, in the absence of normal inhibitory power, the idea was no sooner suggested to consciousness than it was acted upon. There is another explanation also of such sudden and impulsive acts. In some cases they are undoubtedly due to the occurrence of hallucinations of hearing.
Acute Mania or "raving madness" is an acute psychosis characterized by a sort of mental ataxia, which disturbs and interferes with the processes of perception and ideation, and which may cause their suspension even up to the point of producing a state of unconsciousness. There is intense mental excitement and inco-ordination, associated with grave disorders of nutrition and metabolism, generally accompanied by uncontrollable motor restlessness. The disease is of most varied origin. The temperature in many cases is mildly febrile, especially in the earlier stages of the attack, but after the first or second week it is said to show a tendency to become subnormal, and thereafter to run at about one degree below the normal.

With regard to the relative frequency of acute mania, CLOUSTON (Mental Diseases) states that out of 2377 admissions into the Royal Edinburgh Asylum, during the seven years 1874-80, only 297, or about 8 per cent. were classified as acute mania. Statistics on the subject are, however, of little value, for authorities differ greatly as to what constitutes acute mania.

A further stage of the disease is described by some writers under the term Delirious Mania or Typhoid Mania, but the same difficulty exists here also as to what is precisely meant by the term. Some authors maintain
that delirious mania is a distinct form of mental disease and a very fatal one.

BRUCE (Studies in Clinical Psychiatry) considers the term typhoid mania or delirious mania a misnomer, and states further that he has seen all the toxic insanities, whether of metabolic or bacterial origin, terminate in typhoid or delirious mania which, he says, is an almost invariably fatal complication.

CLOUSTON (Mental Diseases), on the other hand, appears to admit the distinction of delirious mania from acute mania, but thinks that the worst cases very often recover.

From my own experience of cases, and consideration of the physical conditions associated with them, I am strongly inclined to agree with BRUCE, and am of opinion that the so-called typhoid or delirious mania is an extreme and usually fatal stage of acute mania, but is not in itself a distinct form of mental disease.

CAUSATION OF ACUTE MANIA.

The etiology and pathogenesis of acute mania have been the subject of much recent and careful investigation by a few workers in this country, as well as by many on the Continent. Many authorities have endeavoured to establish the presence in the patients of pathogenic
micro-organisms by bacteriological examination of the blood, the cerebro-spinal fluid, and various organs and tissues of the body. In the group of more serious cases, running a febrile course and terminating fatally and presenting the clinical features of a state of infection or of severe general intoxication, though positive results are not altogether absent, many of the findings are conflicting and lead to a negative result.

The following brief statement of the work of Continental observers is given by TANZI (Trattato delle Malattie Mentali): BRIAND, in three cases of acute delirium, observed that the blood contained rod-shaped micro-organisms (1881); REZZONICO, in 1884, found masses of cocci within the cerebral vessels; BIANCHI and PICCININO, in 1893, isolated from the blood a bacillus with special biological properties, to the pathogenic action of which they attributed certain forms of acute delirium; BUCHHOLTZ, a short time afterwards, not having discovered any organism in the blood, found them after section of different organs; RASORI, about the same time, isolated from the cadaver a bacillus with distinctive properties, but different from those of the organism described by BIANCHI and PICCININO; CENTI, from 1898 to 1900, found in some cases the common pyogenic organisms which had penetrated secondarily into the blood stream; CAPPELLETTI in 1899 demonstrated the presence of
cocci and the bacterium coli in the blood and viscera, but only in the pre-agonal period and after death; KAZOWSKY, in 1899, found cocci in the blood, the cerebro-spinal fluid and the spleen; but the case was an exceptional one in which there had been ulceration of the colon, and in the ulcerated area the same cocci were found, including the staphylococcus pyogenes aurens; SANDER, in 1901, examined the spleen and the lungs, and found in them staphylococci and diplococci; in one case the bacillus of influenza, and in another the diplococcus of Weichselbaum.

In contradistinction to the above, CARLO MARTINOTTI (1894), CARITTO (1896), OFNI (1898), and ARMANNI (1899) obtained negative results.

DIDE, in a discussion at the Lille Congress on the blood in the insane (L'Informateur des Alienistes et des Neurologistes, 1896), stated that various cocci and bacilli had been obtained from the blood of the insane, but that none of these are specific of insanity. At the same time their presence in the blood is abnormal; and DIDE considers that, though circulating in the blood as saprophytes, they may secrete nerve poisons, and so be functionally pathogenic. In the discussion upon DIDE's paper, MAURICE FAURE said that he had, between 1898 and 1901, along with LAIGNES LEVASTINE and ROSENTHAL, examined for bacteria the living blood of forty-six
delirious persons suffering from various acute diseases, and had only once obtained a positive result - Eberth's bacillus in a case of typhoid.

BRUCE (Studies in Clinical Psychiatry) states that acute mania, excited melancholia, folie circulaire in both its phases, hebephrenia, katatonia, and the insanities associated with epilepsy and general paralysis are bacterial infections.

Positive evidence, however, of the presence of bacteria in the blood of patients suffering from the above-mentioned diseases was obtained in only two instances, though for two years BRUCE examined the blood in every acute case of insanity coming under his care. One was a case of acute mania in a typhoid state, which gave a pure growth of a small streptococcus, and the other was a case of katatonia, which also yielded a streptococcus, somewhat larger.

BRUCE tested the serum reaction of 32 cases of mania to both these organisms in dilutions of 1 to 30, and obtained definite agglutination of the organism isolated from the case of acute mania in 19 of these cases.

Generally speaking, it is apparent, from the direction of the investigations pursued by the above-mentioned workers, that the present tendency is to ascribe to all mental disorders of the acute confusional
type, whether they manifest themselves with maniacal or melancholic symptoms, a toxaemic and in some cases a bacterial origin. The relationship existing between many cases of acute confusional insanity and certain infective disorders is well-established. Mental disturbances are not uncommon in connection with such diseases as typhoid fever, scarlatina, acute rheumatism, erysipelas, malaria, influenza, pneumonia, smallpox and puerperal fever. Other cases of mental disturbance are clearly related to chronic affections of the digestive tract: gastric or intestinal catarrh or chronic constipation. Conditions of physical shock and exhaustion may precede the onset of acute mania: overwork, sleeplessness, severe or repeated loss of blood, prolonged lactation and cachexia caused by tumour growths and other surgical conditions. Other cases may be consequent upon psychical shock and the presence of various emotions, but in many cases it must be confessed that the cause escapes detection or is reduced to merely a vague presumption.

The following remarks by TANZI (Trattato delle Malattie Mentali) seem to the writer to very justly sum up the situation. "From all this it may be concluded that it is impossible to effect the pathogenic unification of acute confusional insanity except from the standpoint of intoxication. It is probable that infective
disorders, existent or pre-existent, states of exhaustion or of auto-intoxication and physical fatigue or psychical trauma concur in producing analogous, but more or less accentuated, effects upon the bodily metabolism. They thus determine a disturbance that is transitory and reparable in its nature, but sometimes so acute as to produce other functional disturbances which in their turn are capable of causing death."

**PATHOLOGY OF ACUTE MANIA.**

The *MACROSCOPIC* pathological anatomy of acute mania is neither distinctive nor abundant. Certain lesions may be met with in different cases which are of etiological importance, such as local morbid conditions in the uterus giving rise to puerperal septicaemia or typhoid ulceration of the intestine. The heart may show thinning of the myocardium or fatty degeneration. The spleen is often congested and friable. Fatty degeneration is very common in the liver and kidneys. The nervous centres are sometimes hyperaemic, sometimes anaemic, the latter being said to be specially the case, if death has been preceded by coma or serious collapse.

*MICROSCOPICALLY*, acute changes are to be observed in the cells of the central nervous system, which include disintegration of the chromophil substance of the
protoplasm (chromatolysis) and nuclear changes by which the nucleus becomes more deeply stained. In some cases the cell body appears rounded and as if swollen, the protoplasmic prolongations are thinned and may disappear, the chromatic substance becomes finely disintegrated and diminished in quantity in the centre of the cell; the nucleus becomes markedly eccentric and is often lenticular in shape, the hilus being turned towards the centre of the cell, and the concavity thus presented contains thickly condensed chromatic molecules which seem to penetrate for short distances into the walls of the nucleus.

The neuroglia does not exhibit any important alterations, and the bloodvessels as a rule appear to be normal, though swelling of the endothelium or proliferation of the endothelial nuclei may sometimes be observed. The presence of different bacteria has been described by different authors, but it is exceptional.

CLINICAL PATHOLOGY OF THE BLOOD IN ACUTE MANIA.

The condition of the blood in various forms of insanity, acute and chronic, has been investigated during recent years by a comparatively small number of workers. The smallness of their numbers has not, however, prevented a great diversity of result in their findings.
DA COSTA (Clinical Haematology) mentions that JOHNSON and GOODALL (Lancet, 1903) found the leucocyte count highest during the acute stages of mania, and lowest during states of remission and recovery. This is opposed to the findings of BRUCE, who states (Journal of Mental Science, 1903) that the number of leucocytes stands in direct relation to the improvement of the patient, convalescents showing a progressive leucocytosis with a high percentage of polynuclear neutrophiles, which persists after recovery, but which rapidly diminishes should a relapse occur.

BRUCE, in the article referred to, states that MACPHERSON, KRUPSIAKIEWICZ, KROUMMILLER and others have examined the leucocytes in mania and other mental conditions, and that he is bound to admit that his observations do not bear out all the results of these earlier workers. He can only explain this discrepancy by the fact that these observers were misled by making isolated observations, whereas he and his fellow-workers made continuous observations on each patient for weeks and months. The following were the results obtained by BRUCE:

If the case was observed early in the acute stage, in every instance there was a leucocytosis of from 16,000 to 20,000 per c.mm., and sometimes the leucocytosis was even higher. The percentage of the
polymorphonuclear cells was never below 70 per cent. This state of affairs did not last for many days, and then it was noticed that the leucocytosis fell sometimes as low as 10,000 per c.mm., but never lower. More generally the leucocytosis was 14,000 or 15,000 per c.mm. Along with this change the polymorphonuclear cells fell to 60 per cent. or even lower, but they never in any case came near 70 per cent. There was a corresponding rise in lymphocytes. This stage in most of the cases lasted for weeks, in others for months. The leucocytosis varied a good deal, corresponding to exacerbations of the disease. A slight increase of excitement was accompanied by a rise in the leucocytosis to perhaps 17,000 or 18,000, but the percentage of polymorphonuclear cells rarely rose above 60 per cent. A further change noticed during this period was the occurrence of eosinophiles, which were sometimes so numerous as to constitute a mild eosinophilia of 3 to 5 per cent. An eosinophilia did not, however, occur in every case. Whenever distinct mental improvement set in the leucocytosis again rose, and along with this rise the percentage of polymorphonuclear cells rose, sometimes above 80 per cent, always above 70 per cent. As recovery became complete, the percentage of polymorphonuclear cells gradually fell until they averaged somewhere between 60 and 70 per cent., but the most
interesting thing of all was the fact that the leucocytosis persisted for weeks and months after complete recovery. Bruce had not, up to the time of writing his paper, had a single exception to this rule. It is highly probable that this leucocytosis persists indefinitely, and that it is a protective leucocytosis. If these observations are correct, they prove that acute continuous mania is an acute infective disease, and that when recovery takes place, a condition of immunity is established. The persistent leucocytosis would indicate that although there is apparent recovery, the cause of the disease is still in the body of the patient, and is only kept in check by the high leucocytosis maintaining an efficient immunity.

These investigations of Bruce and his fellow-workers possess a value beyond the actual statement they provide of observed changes in the blood of the acutely insane. They are an indication of the tendency not to be satisfied with the hitherto generally accepted ideas as to the causation and more particularly the symptomatology of mental disease. It is felt by many that a classification of mental diseases based upon their mental symptomatology can never be satisfactory or scientific, and that a classification based upon observed physical data, obtained by clinical investigation of cases, is much to be desired. The existence,
or perhaps rather, the general acceptance, of such data can at present be hardly said to exist, and in all cases, results such as the above will require to be verified and confirmed by independent observers.

PREMONITORY SYMPTOMS OF ACUTE MANIA.

It will generally be found upon enquiry into the history of an attack of acute mania that the patient, for some days, or weeks, as the case may be, has shown some signs of both mental and physical change. It is very often the case that some event has occurred which has disturbed and lowered the state of nutrition. Headache, neuralgia, sleeplessness may all be complained of. Signs of gastric and intestinal disturbance are very frequently present. The first symptom of mental disturbance is usually mental depression with ill-defined anxieties and fears, and the patient generally exhibits a departure from his former and habitual state of mind with loss of mental balance as shown in occasional restlessness and irritability. In a certain number of cases the acute symptoms may appear suddenly without any of the above prodromata having been observed.

PHYSICAL SYMPTOMS.

In many cases the patients who are admitted to an
asylum suffering from acute mania are well developed and nourished, and often display a great degree of muscular activity and strength. The face is sometimes suffused, sometimes pale and drawn, and the pupils are often widely dilated, but vary much under the influence of the emotions and also react with abnormal promptness to light and accommodation.

The special senses are generally acute, and by some authorities are said to be hyperacute, and especially the senses of hearing and of smell. Insensibility to fatigue has already been referred to as a prominent feature of acute mania, and along with it there is generally loss of sensibility to heat and to pain, but the sense of touch is not affected and may be hyperacute.

Inco-ordination of movement is always present, but may vary much in its degree and situation. Excessive movement is more specially prominent in the arms, hands, fingers and legs, and may be so extreme as to render the patient most violent and destructive. This intense motor agitation of the acute maniac, however, is purposeless or at most defensive, however furious it may seem, and must therefore not be confused with the excitement of other maniacal patients, which is offensive and due to a feeling of anger. If not actually inspired by terror, it is the product of internal stimuli.
some cases the inco-ordination of movement is specially prominent in the muscles of expression, the face being continually distorted by ridiculous or furious grimaces.

Authorities differ as to the condition of the patellar tendon reflexes, but in many cases the agitation of the patients is so great that there is great difficulty in eliciting or accurately testing them. Of 4 recent cases, I find that the knee jerks were exaggerated in 3 and could not be tested in 1.

Most cases of acute mania present on admission well marked signs of alimentary disturbance. The lips are dry, and, with the teeth which are often in very bad condition, are covered with sordes. The appetite is generally poor but is capricious and in some patients is inordinately great. There is sometimes a considerable degree of thirst. The digestive power in the early days of the attack has been found by Bruce (Studies in Clinical Psychiatry) to be almost nil. Constipation is commonly present and the bowels are frequently much overloaded.

The urine at the commencement of the attack is scanty and high coloured. There is stated to be an excessive output of the nitrogenous waste products of the body. A thick deposit of urates is commonly present.

The circulatory and respiratory systems in most cases present no special peculiarities, though a slight
degree of quickening of the pulse rate is not uncommon. The temperature may be irregularly febrile in the early stages of the attack, but this has occurred only exceptionally in my experience, and, as a rule, the temperature remains subnormal throughout the attack.

The hair in many cases is dry and brittle. The skin also is generally dry, but perspiration, specially in the palms of the hands and soles of the feet, may occur in some cases.

In women, disturbance of the menstrual functions is usually present, but directly contradictory statements have been made upon this point.

MACPHERSON (Mental Affections) states that menstruation is generally suppressed, while BRUCE (Studies in Clinical Psychiatry) writes that the menstrual function is never suppressed as it is in some other forms of mental disease, but it may be irregular. There is in many cases a tendency for the mental symptoms to become exaggerated during the menstrual period.

MENTAL SYMPTOMS.

The mental manifestations of acute mania are characterized by excitement and incoherence of ideation, loss of the power of attention to external events, more or less complete disorientation as to time and place, persons and things, and illusions of the special senses.
The exaggerated activity of the special senses, and more particularly those of sight and hearing, exposes the patient to an incessant, but incoherent, succession of stimuli, but his perceptions of these stimuli are to a great extent altered or inhibited by more intense internal stimuli.

True hallucinations of the special senses are rare in acute mania, but illusions of the senses are common and important, according to MACPHERSON (Mental Affections), but by other authors hallucinations are stated to be present and may give rise to transient and disconnected delusions.

The general mental state of the patient who suffers from acute mania may be briefly stated to be characterized by the following features: intense excitement and incoherence of ideation: rambling and incoherent speech, amounting to in some cases a loss of articulate language: hyperactivity of the special senses with great confusion and conflict of ideas: failure of the power of attention: more or less complete disorientation, with a tendency to mistake the identity of persons and objects around them, and to associate objects by their external and not by their essential qualities: great emotional instability, and more or less complete abolition of conscious will power.

Many of the most important points in the history
and clinical condition of a typical case of acute mania are illustrated in the following notes of a female patient recently admitted to the Aberdeen Royal Asylum:

Mrs S., aged 35, a cottar's wife. On admission she was said to have been insane for a few days, and the medical certificates stated that her manner was quite changed from its usual, that she was very restless and much excited, talked incessantly and incoherently, believed that her child was dead while it was alive and well, jumped out of bed suddenly and danced about making strange faces.

Enquiry into the family history showed that the patient's mother was mentally defective, though she had never been committed to an asylum, and that two half-sisters of the patient, younger than she, were insane, both of them being cases of dementia praecox.

Personal history was to the effect that the patient had been married for 10 years, during which time she had given birth to 6 children, that she had also had 1 child shortly before her marriage; that her habits had not been alcoholic, but that for more than a year she had been careless and neglectful of her house and children, whereas she had previously tended them well.

There was no history of any previous mental attack.

The history obtained of her present illness was as follows:
A few days before admission she became much excited, screaming and crying: she lost her appetite and was sleepless: she neglected her children, giving them no food, and became very faulty in her personal habits: she showed evidence of suffering from aural and visual hallucinations and raved about the King: she became violent and impulsive, thought men were going to cut her throat, and spoke incoherently about cutting up her children.

The following is a brief description of her physical condition on admission:
She was a small but well developed and fairly well nourished woman: she was in a very dirty, dishevelled and uncared for state, her chest and shoulders being covered with scratches due to verminous irritation: her hair was
dirty and matted. Her temperature was 98°F., and her pulse-rate 74. Her appetite was good: she took food willingly and in large quantities: there was no abnormal degree of thirst: her tongue was moist and slightly coated towards the base: her lips were rather dry but clean: her teeth were in very bad condition: the hard palate was rather narrow: the bowels were overloaded, faeces being palpable in the left inguinal region. The pulse-rate was found to be very variable: it was 74 on admission; a few hours later after an excited outburst it was as high as 118: on the day after admission, when the patient was being examined, it was 94. The heart sounds were normal.

Examination of the chest revealed nothing abnormal, but the breathing at times was of a jerky, spasmodic character.

The urine was rather dark in colour and scanty in amount: the reaction was alkaline: there was a deposit of mucus and granular debris: no albumen, blood or sugar was present. Muscular development and nutrition were average: the patient was in a state of general motor explosiveness, exhibiting sudden and purposeless movements of head, limbs and trunk.

Both the patellar tendon reflexes were exaggerated, the left being more so than the right.

The pupils were circular and equal, moderately dilated, and reacted promptly to light and accommodation.

Mentally the patient for the most part was in a state of intense confusion and restlessness, shouting out loudly in an explosive manner, singing psalms and hymns disjointedly, talking at times in a very incoherent manner and displaying great general motor restlessness. This condition was occasionally interrupted for a short time by a fairly lucid interval during which she replied relevantly to a few questions, but her power of attention was very fugitive and easily exhausted. She was very emotional, laughing loudly at one moment and weeping copiously the next. She appeared to suffer from hallucinations of sight and hearing, and had delusions regarding the identity of those about her.

The following is a letter written by the same patient:
The Hospital  
Aberdeen.

Dear Sir,

Dr. McLeod if this be a right house I am innocent but failed the right one.

Safe enough will Annie will do if always well well well I am raging enough here.

Fire away Annie is still with the bucket on the bucket on the boat.

She knows that there ever all the world from a motor car dead while annoyed by Jameson then hrone. If you be the house.
COMPLICATIONS.

A detailed and systematic statement of the complications that may arise during the course of an attack of mania in any of its numerous forms would perhaps be neither practicable nor profitable. Such complications, from the nature of the malady with which they are associated, are necessarily widely different in character. They may be personal to the patient, involving the loss of his liberty and civil rights. They may be of medical or surgical interest, and concerned with various intercurrent diseases. They may present questions of legal or social importance, in which principles of far-reaching influence may be involved.

The conduct of the individual who is in the initial stage of an attack of simple mania may expose him to serious personal and social disadvantages and financial losses without, however, leading him into any excesses that would warrant his being certified and detained as insane. The progress of the disease and the development of further and certifiable signs of insanity, in such a case as the above, will be the explanation of the patient's previous conduct and his excuse for it; but, in a certain number of cases, no such further developments take place. As an instance of the latter state of affairs, I cannot do better than quote the following
case described by CLOUSTON (Mental Diseases).

**Case of Simple Mania, Change of Life, Immorality, No Legal Insanity.**

C.A., a gentleman, famed in his neighbourhood for his prudence, probity and devotion to business, for his wisdom, morality and religion, at a certain period of his life, after middle-age had come on, underwent a total change. He became rash, indifferently honest, utterly careless of his business, foolish in his schemes, very doubtfully moral, and careless of religion. He changed in his mode of dressing, in the company he kept, and his way of living. His affairs became entangled, and he lost a fortune by foolish speculation, this being entirely new to him. Yet he mingled in society all the time; never said a particularly foolish thing; transacted business in a large way of the utmost importance to himself and others; and Clouston affirms that he would have been very sorry indeed for anyone who had called him insane to his face, or taken steps to abridge his personal liberty or deprive him of his civil rights as a citizen. No jury in the empire but would have held him sane, and no judge but would have made his case a text for a homily on the danger of medical views in regard to insanity and the liberty of the subject. ..... C.A. got through his fortune, ruined his reputation, and scandalised and estranged his friends, all without any motive of the ordinary kind; and all this came on suddenly and in entire opposition to the whole tenor of his life and to every principle that had ever held sway over him for twenty years. Yet legally he was sane, just because the brain change assumed to be the cause of all this did not go far enough to make him lose his self-control entirely, and to act manifestly as a lunatic.

In such circumstances as the above the patient is very liable to associate with individuals and become involved in transactions that in his normal and healthy state of mind he would have nothing to do with. These
results of such conduct on his part may all be regarded as complications arising from his maniacal state of mind.

The intercurrence of various acute diseases and affections during the progress of an attack of mania has for long been known to sometimes result in the marked improvement of the mental state of the patient and in some cases in recovery. It was the observation of this fact that led BRUCE, in 1892, to employ thyroid extract in the treatment of insanity. Psychiatric literature is full of the records of cases which made good recoveries after suffering from febrile conditions and local inflammatory affections such as carbuncles, poisoned wounds, parotitis, etc. The rational explanation of these results of acute inflammatory and febrile intercurrent disease is to be found in the hyperleucocytosis which is associated with them. Attempts have been made to reproduce a corresponding physical condition by the injection of 2 c.c. of terebene subcutaneously into the flank. This method was initiated and has been largely employed by BRUCE who found it to be of great benefit in a certain number of cases. Further reference to this subject, however, may be postponed at present to be more fully dealt with when the question of treatment is under consideration.

The presence of maniacal excitement and restlessness in a patient who has met with a severe accident, such as
the fracture of a limb, or who has undergone a surgical operation, may be a very serious and trying complication. It may render the carrying out of proper treatment extremely difficult and in some cases impossible. Bandages and splints will be torn off, surgical dressings removed and dirty rags applied in their place, wounds opened up and stitches withdrawn, and innumerable risks incurred by the restless and insensitive subject of maniacal excitement.

I can recall the case of an epileptic who suffered from regularly recurring attacks of great excitement and confusion. Just before the onset of one of these attacks he had the misfortune to sustain a compound fracture of both bones of his left leg, the proper treatment of which became a matter of the greatest difficulty. It became necessary to employ mechanical restraint in the shape of a strait jacket and a double long splint to prevent him from taking off the box splint in which his fractured limb was set, throwing himself out of bed on to the floor and generally exhibiting conduct the reverse of what was most essential for his case.

Another patient, who gave birth to a child in the Asylum during an attack of acute mania, and sustained a rupture of the perineum that required several stitches, on two occasions tore out the stitches, and could only be restrained from again doing so by the use of gloves.

The various insane tendencies of certain chronically maniacal patients, such as their liking for fantastic garments and conspicuous objects, along with their kleptomaniacal manner of gaining possession of them, their habit of eating unsuitable or positively harmful
articles and destroying useful and necessary furnishings may be considered to a certain extent as complications of the disease, but as such they fall rather to be considered under the heading of treatment.

**DIAGNOSIS.**

The question of the diagnosis of mania is not one that involves much practical difficulty in the majority of cases. The presence of morbid mental exaltation or excitement with a varying degree of mental confusion and motor restlessness is sufficient to distinguish the attack as a maniacal one, without going into any refinement as to which of the many varieties of mania the patient is suffering from.

As has been previously mentioned, by some authors it is considered that there are two types of mania, the first being a condition of excitement with confusion (acute mania), and the second being a condition of excitement without confusion. The following are some of the more important points in the differential diagnosis between these two conditions:

In excitement without confusion the disease begins and generally persists with a lucidity, which is the direct opposite of the confusion of acute mania. The confusion of the patient who is suffering from an attack of acute mania is the result of unsystematized hallucina-
tions of the special senses, and sudden mental lacunae arising from internal and contradictory stimuli; whereas the excitement of the other patient is due to abnormally rapid and numerous and vivid sensory impressions which, however, are not inexact or confused. The subject of excitement with confusion is disorientated: the subject of excitement without confusion is not. In the former there is an excess of internal activity, erroneous sensations, blind impulses, disconnected ideas, and a great poverty of perceptions from without on account of which the patient is separated from the world round about him and is altogether self-absorbed: in the latter there is an endless accessibility to external impressions and contact with external reality is far from being lost, but the overcrowding of stimuli makes it difficult for them to be utilized. Physically, in excitement with confusion, there are stated by the same authorities to be evidences of very acute toxaemia, while in excitement without confusion the symptoms of toxaemia are much less severe.

Episodes of mental exaltation and excitement are common in general paralysis and in some instances may supply the first evidence of the presence of the disease. Similar attacks of excitement are not uncommon in epileptic patients. Imbeciles and paranolacs are liable to somewhat transitory attacks of mental exaltation and
excitement but these are characterized by the essential deficiencies and limitations of the intelligence of the patients and may thus be easily diagnosed for what they really are, viz., simple complications of a constitutional psychosis or mental anomaly.

Hysterical patients may exhibit states of intense excitement which very closely resemble those of true mania but are really of an hysterical nature. Because of their essentially hysterical character, such attacks are likely to arise with very great suddenness and also to disappear with greater rapidity than is usual.

Certain toxic agents produce a delirium which it is sometimes not easy to distinguish from some forms of mania. In poisoning from belladonna there is great motor restlessness, and delirium is generally a very marked symptom. It is sometimes pleasing, accompanied by uncontrollable laughter or by incessant talking, sometimes only by voiceless motion of the lips, always by hallucinations. The effect of alcohol in certain individuals is to produce a transient mental state very similar to that of mild simple mania.

In the diagnosis of the above mentioned and similar conditions much must depend upon the history obtained of the case, while prolonged observation is needful in many instances before it can be decided to which of the two types of mania, confusional or non-confusional, any
individual case can be said to belong.

Insanity is sometimes feigned by criminals in prison or persons who have been accused of crime, or who are anxious to escape the performance of some duty or to be discharged from some public service such as the army or navy.

Feigned insanity may also be met with by the general practitioner and especially by one whose practice brings him into contact with benefit clubs, insurance companies and large commercial concerns, such as railways, which give employment to a great number of servants.

The forms of mental disorder selected for imitation by malingerers are very numerous, and of these mania is not infrequently chosen. It would not be possible, I imagine, for an observer with any experience of mental diseases to be deceived by a person who was feigning an attack of acute mania. The incessant restlessness of the true subject of this disease could not be supported by the malingerer for any considerable length of time without the evidences of fatigue which, in the true maniac, are conspicuous by their absence. It is impossible to maintain the utter incoherence of speech and confusion of ideation that are characteristic of the true disease. The malingerer cannot do without sleep, and while he may make a great show of his symptoms when there is any one present to observe them, he will probably at
some time sleep soundly in a manner that the patient suffering from true insanity is rarely capable of.

A feature that is almost universally characteristic of impostors is their readiness to produce new symptoms of the disease they are feigning in response to suggestion. A casual hint of surprise at the absence of certain symptoms may induce them to add such to those they have already assumed, and a quiet acknowledgement of such additions may encourage them to accept from time to time any other suggestions that may be made.

PROGNOSIS.

It is impossible to attach the same meaning to the word 'prognosis' in relation to mania that is to be applied to such an expression as 'prognosis in pneumonia' or 'prognosis in typhoid fever'. In the two latter instances we are dealing with an individual and well-defined disease due to a definite and recognized pathological process; whereas in the case of mania, we have to do more with symptoms which in many cases are predominantly mental in character and cannot be referred to any acknowledged or demonstrable morbid condition.

The factors that must be taken into consideration when attempting to judge of the prognosis in any case of mania are very numerous and widely different in
nature. The physician must enquire into and pay careful attention to the family and personal history of the patient; his former temperament and disposition, when sane and sound; the existence, nature and number of previous attacks, if any such have taken place; the history of his present illness alike in its physical and mental aspects, and the important question as to the possible causation of his attack.

Much depends upon the variety of mania present and the degree of severity of the attack. In the type of acute mania associated with puerperal conditions, the prognosis is generally regarded as good, and the recoveries from this form of mental disease are stated to be very satisfactory. According to several authorities, between 70 and 80 per cent of cases recover, and there appears to be a less tendency to relapse than in other forms of mental disease.

On this point BRUCE (Studies in Clinical Psychiatry) makes the observation that he is inclined to believe that recovery from excitement with confusion complicating the puerperal state is of two types, one complete and the other incomplete. He believes that those in which the patient makes a complete recovery, without any evidences of permanent toxaemia, are probably those in whom the uterus was the seat of septic processes: when the source of toxaemia is removed, there is no tendency to
relapse. On the other hand the patients who present persistent hyperleucocytosis after recovery must have some other source of toxaemia akin to that which causes excitement with toxaemia of non-puerperal origin, and these patients are liable to relapse.

The view is an interesting one but, in my opinion, is not wholly conclusive. My personal experience of the acute puerperal insanities induces me rather to lay great stress upon a factor which is not mentioned by Bruce in relation to this matter of incomplete recovery. I mean the presence of a hereditary predisposition to insanity. Two cases of acute puerperal insanity may originate at the same time, may present a great similarity in their course both as to physical and mental symptoms; but if one case is uncomplicated by any family history of mental or nervous disease, and the other is complicated by the presence of such a history, I should consider that, other things being equal, a more favourable prognosis should be given in the matter of ultimate and complete recovery, in the first case than in the second, and that the tendency to a recurrence of a similar attack was very much less in the first than in the second case.

CLOUSTON (Mental Diseases) mentions the following features among others, as favourable indications of prognosis in mania:— a sudden onset of the disease;
rapid supervening of acute symptoms; youth of the patient; retention of appetite for food; no paralysis nor paresis nor marked affection of the pupils; no epileptic tendency; no disturbance of articulation; no unconsciousness to the calls of nature; no fixed delusions nor delusional condition, the disease rising to an acme and then showing slow and steady signs of receding. Unfavourable indications he considers to be:— a gradual and slow onset; failure of nutrition and paralysis of trophic power; persistence of fixed delusions and specially of hallucinations; refusal of food so persistent as to necessitate forcible feeding; dirty habits; persistent masturbation, and general perversion or degradation of the natural affections, tastes, habits and appetites.

TERMINATION OF MANIA.

The possible terminations of mania are stated by the same authority to be as follows:

(1) In about 50 per cent. of all the cases of mania complete recovery takes place.

(2) Partial recovery, as manifested in some slight sign of enfeeblement or eccentricity or lack of control or attention or change in the affections.

(3) The gradual intervention and predominance of fixed
delusions or delusional states.

(4) Dementia which happens in about 30 per cent. of all cases of mania.

(5) Death, due to exhaustion or other causes directly attributable to the disease.
In mental disease, as in physical disease, scientific and rational methods of treatment must be based upon a proper understanding of the causes that have cooperated to produce the morbid condition. The great variety and the insidious and distant onset of symptoms, with the wide differences associated with the constitutional and hereditary tendencies of the patient have already been referred to in the section of this thesis relating to the AETIOLOGY of mania.

**Tolle causam** is a sound scientific maxim in dealing with the treatment of any form of disease, but its complete application in most cases of mental disease is of extreme difficulty or an utter impossibility, having regard to the inherent characteristics of mental disease and our present means of treatment.

The pathology of some cases of mental disease is of ante-natal date, but did we even possess any sure and scientific grounds for suspecting the existence of such conditions, and were we in a position to diagnose their nature, the question of treatment is still practically untouched and must necessarily for long remain in an almost entirely experimental condition.

In this relation the work of **BALLANTYNE** (Teratogenesis, an Inquiry into the causes of Monstrosities,
and Manual of Antenatal Pathology and Hygiene, etc.) is of interest, and may prove of value in the elucidation of certain forms of mental disease or defect, such as congenital imbecility and idiocy.

PROPHYLACTIC TREATMENT.

The recognition and treatment of the symptoms of incipient insanity is a subject to the importance of which increasing attention has been paid in recent years. Foremost among the names of those who in Scotland have advocated the adoption of measures to provide for such treatment in general hospitals and infirmaries are those of SIBBALD, CLOUSTON, MACPHERSON and CARSWELL.

The prophylaxis of mental disease must rest largely with the general practitioner, and at present the medical student who is destined to become the general practitioner receives little, if any, instruction on the subject. The question of the early and preventive treatment of mental disorder is thus closely connected with that of clinical teaching upon such disorders to the medical under-graduate during his curriculum.

The following remarks on the subject of the prodromata of mental disease and their treatment form part of a paper recently read to the Aberdeen Medico-Chirurgical Society by myself, which appeared in the March issue of
"The Scottish Medical and Surgical Journal" 1906.

"The following facts were ascertained as the result of an examination of the history obtained in the cases of 12 patients recently admitted into the Aberdeen Royal Asylum. In 9 of the cases there was a family history of insanity; in one of the remaining 3 cases there was a marked family history of cancer and phthisis. In 2 of the 12 cases there was a history of a previous mental attack. In 3 of the cases the attack of insanity was preceded by an attack of influenza occurring respectively 6 weeks, 5 months and 17 months before admission. In 6 of the cases headache had been a prominent symptom. In 11, loss of sleep, varying from total sleeplessness for considerable periods to occasional restlessness at night, had been present. Loss of appetite, amounting to refusal of food on one or two occasions, had been present in 9 cases. Nine of the patients had complained of a general feeling of being not well. The duration of the period during which some or all of these symptoms had been present in the different cases varied from a few days in 3 cases, to 1 year in 1 case."

"Though aware that the above results can represent only a partial and very inadequate summary of the prodromata of an attack of mental disease, they contain certain points that I think will repay consideration. Passing over the question of heredity for the present, it is of
interest to note the occurrence of an attack of influenza in 3 of the cases. Dr. Savage, in his recent Lumleian Lectures upon the Increase of Insanity, laid stress upon influenza as a factor in the causation of mental disease. He says that it is a constant cause of most obstinate insomnia: it causes painful neuralgias, and often disturbs digestion and nutrition. It may start any form of insanity, but there is no specific form of insanity that can be called influenzal. In patients with strong neurotic heredity the first attack of insanity is often preceded by influenza. In patients who have had previous attacks of insanity, influenza may start a fresh attack. Suicides increase markedly after an epidemic of influenza. This fact of the occurrence of various forms of mental disease after influenza is an additional reason, if one were needed, for emphasising the importance of the after-treatment of an influenzal attack, and of ensuring that convalescence is followed by real recovery."

"Of the 6 cases in which headache occurred, 5 were women and 1 was a man. I have had no experience as to whether the headaches in such cases possess any special features, but in the article already referred to Dr. Clouston writes as follows in regard to them:— "In most cases the headaches have not quite the character of the ordinary 'woman's headache:' they are more constant, more intense, more distracting and disabling; the
patients will not always admit they are 'headaches' but describe them as 'peculiar' sensations. Sometimes there are feelings of weight, sometimes of lightness, sometimes a bursting or congested feeling. They are seldom localised, they seldom have the shooting neuralgic character, they are not always relieved by rest and the recumbent position, but rather by fresh air and mild exertion. They have not the character of megrim, and seldom are attended by sickness or vomiting. They are most frequently and characteristically seen as prodromata of the melancholia which follows influenza. Associated with, or taking the place of such headaches, there may be various paraesthetic disturbances, such as giddiness, sensations of weight or lightness, emptiness or fulness, heat or cold, etc. The continued occurrence of such sensory disturbances, particularly in female patients, should suffice to put the family doctor on the look-out for other signs of a possible mental attack, and certainly to do his best to prevent their continuance."

"A varying degree of sleeplessness is certainly a very constant forerunner of an attack of mental disease. It was present in 11 out of the 12 cases. Insomnia is so frequent and prominent a symptom of many forms of fully-developed mental disease, that it may perhaps be argued that its early occurrence should not be regarded as a prodroma of a possible or subsequently occurring
mental attack, but rather as an actual symptom of an already existing attack. In certain cases this may be so, but in other cases it almost certainly is not, and in any case it seems wiser to give the patient the benefit of the doubt, and to treat the case in the belief that the restoration of sleep may prevent the onset of insanity. I think the following case may be of interest. A.B., aged 48, a fisherman, was recently admitted to the Aberdeen Royal Asylum. His father is at present, and has been for a long time, in the asylum. The medical certificates stated that A.B. had been restless and excitable for some weeks, complaining of different imaginary ailments; refused to answer questions put to him; was very violent; required to be held by force; thought he was mortifying; asked that his children should be removed from him, as he feared he might attack them. The history was as follows:— For the last 10 weeks he had been sleeping badly and had also suffered from a "healing finger," which, about 6 weeks before admission, was amputated; the pain of his finger caused loss of sleep, he began to think about nothing but his finger, then thought that his inside was going wrong; often became restless and excited. In this case there was a hereditary predisposition to insanity, but the exciting cause of the attack—the stress—was the pain of the whitlow and the want of
sleep caused thereby. The patient improved very rapidly after admission and was discharged recovered after 6 weeks' residence. It does not seem unreasonable to believe that early restoration of sleep in his case would have prevented the necessity for his removal to the asylum."

"Loss of appetite and general disturbance and failure of nutrition occurred in a majority of the cases. It is certainly the exception in the case of female patients admitted into asylums to find a healthy condition of the lower bowel. Constipation is the rule, but it is a rule that is not confined to the subjects of mental disease. The benefit, both mental and physical, that may result from the administration of a smart purge or a soap and water enema is too well known to require more than mention; it is a commonplace of everyday practice. It is, therefore, all the more important that the present state of matters, in which certainly over 50 per cent. of the patients who are admitted into asylums are found to have their bowels overloaded and constipated, should be rectified. This may perhaps be considered a somewhat trivial or pedantic statement, but in the light of present-day investigation and discovery, the importance of toxic absorption from the intestinal canal can hardly be over-estimated, and the conditions for such absorption should be less often present than they are found to be in
patients suffering from mental disorder. Careful attention to the *prima viae* is one of the golden rules of life. Regulation of the diet and the use of intestinal purgatives and antiseptics may be supplemented by the administration of enemata, and the injection of large quantities - 40-50 oz. - of normal saline solution for absorption. The improvement that follows the employment of such treatment alone is often remarkable. A case exhibiting many of the features of toxic insanity - hallucinations, confusion, excitement, motor restlessness, incoherence of speech, &c., with a slightly febrile or irregular temperature, unhealthy skin, foul tongue, dry lips covered with sordes, constipation, scanty urine thickly loaded with urates - if treated with fluid diet, principally milk, a prolonged hot bath at 100° F., rest in bed, a dose of castor oil or salts, administered by the nasal tube if necessary, and followed by an enema, and, after the bowels have moved, by a normal saline injection, may show a remarkable change for the better in 24 or 36 hours. A case that has reached this stage is perhaps best treated in the hospital of an asylum, but it is probable that similar treatment could often be applied with very great advantage to less advanced and milder cases, and possible also that in some of these its adoption would cut short an attack of mental disease. Loss of weight is frequently a well-marked sign of coming
trouble. Dr. Clouston states that he has known of a case in which 6 stones were lost in the 6 months preceding an attack of insanity. If the condition of the teeth is bad, they should receive attention. Carious teeth are a source of continuous toxaemia. Their removal is followed in many cases by a marked improvement in the general health."

"The appearance and persistence of these signs of bodily disturbance, either prior to or co-existent with the occurrence of mental features that sooner or later lead to the removal of the patient to an asylum, may not at the present time have much importance attached to them and may even be ignored. There is one factor, however, the presence of which seems to me to at once render their occurrence of the highest importance. I mean the presence of a hereditary predisposition to insanity. Given a case in which gradual loss of health occurs without any obvious cause, with sleeplessness, headache, loss of appetite, change of disposition, loss of interest, and other disturbances of a physical or psychical character, careful enquiry should be made into the family history for any evidence of insanity. Conversely, when these symptoms are noticed in a patient who is known to be of a neurotic or insane stock, they should be regarded as indications that a storm is threatening. The important point, however, and one which I
think deserves emphasis, is that the occurrence of such symptoms in any patient is an obvious indication for inquiry into the family history, and that the result of such inquiry may be of great value both for prognosis and treatment."

"Speaking generally, it is probable that most cases of incipient insanity present some signs of physical ill-health, of which a few have been mentioned. The treatment of these physical conditions will not be the doctor's difficulty if he can make his patient understand the reason for his treatment of them. The difficulty is more likely to be that of convincing the patient that treatment is necessary. There need be nothing special in the treatment, certainly nothing to put the stigma of mental disease upon the patient. The conditions to be treated are physical, not mental, and are to be treated like similar physical conditions in any other patient. The important thing is that they should be recognised and treated. It may be thought that patients suffering from such symptoms will not be persuaded that they require treatment, and will refuse to be treated. If a man presents himself to his doctor and is told that he is suffering from a small cancer of the tongue, if he is a reasonable man, he will have half his tongue removed at once, rather than wait and have half his jaw and neck removed. It will be said that the cases are different; that the growth of the cancer and death of the patient are inevitable, while the attack of mental disease is
problematical. The possible escape of the patient, however, is no reason for the neglect of symptoms that may involve him in such an attack."

The management of an actual and fully developed attack of maniacal excitement is a matter that requires careful consideration from many points of view. It may be influenced largely by the social position and financial resources of the patient. If in affluent circumstances, it may often be possible to treat the patient in his own home, whereas an individual in the poorer classes, who may however be suffering from just the same disease, may require to be certified and removed to an asylum for treatment.

Careful enquiry must, of course, be made into the probable cause of the maniacal outburst, and its possible association with some underlying organic nervous disease, such as general paralysis or epilepsy.

The question of treatment, in the widest sense of the term, involves the employment of hygienic, dietetic, medicinal, hydrotherapeutic, occupational, recreative and other methods of treatment which require to be thoughtfully selected and discriminatingly applied, according to the special features and needs of each individual case.

The treatment of mania is essentially the treatment of the individual patient suffering from the disease,
and varies accordingly from case to case; but in the following pages I shall endeavour to deal in general terms with the subject under the following headings:

Bed Treatment - (a) for acute cases, (b) for chronic cases.
Seclusion.
Moral Treatment - Psychotherapeutics.
Exercise, Occupation and Amusement.
Diet.
Baths and Hydrotherapeutics.
Hypnotism.
Sedative drugs.
Hypnotic ".
Stimulants and Tonics.
Purgatives and Intestinal Antiseptics.
Serum therapy - Animal Extracts.
Convalescence.

BED-TREATMENT IN ACUTE MANIA.

The regular practice of placing all newly admitted patients in bed amid hospital surroundings possesses many advantages over the older system of sending them to dayrooms or wards to move about amongst, and take outdoor exercise along with, other patients, unless their
physical condition is such as to prohibit them from doing so. The patient in the former case is more likely to regard himself as a sick man, and less likely to resent the interference with his liberty. The physician is better able to make a satisfactory examination of his patient's physical and mental state, and the attendant or nurse is more readily taught the importance of the medical aspects of their work and encouraged to develop them.

In the case of a patient who suffers from acute mania, the difficulties in the way of such bed-treatment may appear to be considerable. The motor restlessness may be so great that the patient is quite incapable of lying still for two consecutive seconds. He may be so noisy and so incoherent and outrageous in his speech as to greatly disturb many other patients in the ward. Practical experience has proved to me, however, that in the great majority of cases the bed-treatment of such patients can be carried out from the beginning in a well-staffed asylum hospital, when it is supported by other means of treatment, to be subsequently described. The very fact of being in bed suggests to the patient the calm and rest, and induces the sleep, which are so desirable for him; and the inactivity of the recumbent position, by diminishing the inflow of afferent impressions from the muscles to the sensorium, and therefore
the outflow of impulses from the motor and psycho-motor areas to the muscles, leads to a physiological reduction of restlessness.

The clinical charts inserted on the following pages relate to three cases of acute mania who, from the date of their admission to the asylum, were placed in bed and successfully treated there. In the case of one of the patients, Mrs S., I found that the presence of other patients in the beds around her in the ward seemed to greatly increase her excitement and noisiness, but when moved to a single room, with a nurse in attendance, her restlessness and noisiness were greatly diminished.

BED-TREATMENT IN CHRONIC AND RECURRENT MANIA.

It has recently been my experience to have taken over the charge of some two hundred female patients, the great majority of whom have been resident for some years in the asylum. At one time the wards in which they were placed suffered considerably from overcrowding, and there was, generally speaking, an unduly large proportion of noisy, restless, destructive, abusive and violent patients. Recent structural improvements and extensions have made it possible to effect a redistribution of the patients in new wards, and have placed at my disposal a day-dormitory containing 16 beds with 2 single rooms.
January 25th. Intense confusion at times, then short lucid intervals, coherent reply to questions, jumping out of bed, priming, very irritable, talked food. "Very well, generally fainted, once or twice involuntary delirious as in certificate."

January 26th. Acute excitement, noisy, restless, irritable, impulsive, 1 P.M. Hyoscine 1/40 gr. Hypodermic.
9 P.M. Hyoscine 1/80 gr.

January 27th. Excitement less yesterday & today, has kept bed fairly well today, Balline yesterday 24-day retailed.

January 28th. Rather more excited yesterday afternoon, but quieted again today, but very irritable, slept unroused yesterday Hyoscine 1/50 gr. at 11 P.M.

January 29th. Very much excited this morning, Drowned 9 @ 7 a.m. 1/2 cc Anthastaf Serum after food at 6 P.M.

February 3rd. Yesterday & today quieter on the whole, 1 restless yesterday at 9 a.m. for about 10 minutes, this afternoon (1 restless yesterday) went for a walk.

February 6th. Since last note, has varied quiet, slept 8 1/2 hours, restless on Sat. 5th to day very much excited, struggling to get out of bed at 5 a.m., moved to Single Room, kept bed better than after last bed for 30 minutes.

February 10th. No change 7° 8° but much quieter yesterday & today but still restless.

February 12th. Small quantity of Anthastaf Serum.

February 16th. Very excited in Single Room all day.

February 17th. Much quieter 4 tempi & midi in the morning quiet all day.
DISEASE.

Acute Meningitis

Notes of Case.

Name: W. Streeten
Age: 35
Diet: Briefly described
Case Book No.

Date of admission: 21st Jan. 1908

Result: 

Entered at Stationer's Hall

Printed and Published by Wedderspoon & Co. 86, Gate Street Lincoln's Inn.

Gould's Clinical Chart.
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**Disease**

- Cholera

**Notes of Case**

- Name: Sinclair
- Age: 38 yrs
- Diet: Simple

**Case Book No.**

**Date of Admission**

- 2nd January 1908

**Result**

- [Handwritten notes]
M. G. Sehgal

2nd January, 1905

To

Sir,

I am writing to bring to your attention an incident that occurred on the 1st of January, 1905. A fire broke out in the laboratory, and several valuable experiments were destroyed.

I am enclosing a list of the materials that were lost.

Yours sincerely,

M. G. Sehgal
opening directly from it. This dormitory has been utilized for the bed-treatment of all cases occurring among the above-mentioned patients which exhibit phases of or relapses into active insanity. The general result of this method of treatment has been two-fold:

(1) Owing to the removal of restless and noisy patients to be placed in bed in the dormitory, there has been a marked lessening of excitement and noise generally in the wards.

(2) The individual patients who have been so treated by rest in bed have in the majority of cases shown marked improvement.

In some the mere rest has appeared to be beneficial; in others it has been possible to improve their physical condition by more careful feeding with a non-stimulating but fattening dietary, and in yet a third class a course of treatment with thyroid extract has been administered.

The following charts relate to four cases to whom thyroid has been administered. In each instance the patient has been resident in the asylum for a considerable time. All four had the reputation of being very noisy, violent and impulsive patients, and were a source of continual disturbance and irritation to other patients in the ward. The course of thyroid treatment has been followed by continued rest in bed during which the
patients remain much quieter than they previously used to be. I cannot say, however, that they give evidence of any distinct improvement when they are allowed to be up and mingle with other patients in the ward. Their power of self control seems very slight, and they quickly tend to relapse into their former noisy and restless state. I am inclined to believe that the use of thyroid extract in the chronically insane is of little or no value and that any amelioration that has been obtained in the cases above mentioned has been due to the rest in bed, the separation from opportunities of quarrelling with other patients, the influence of kindly and trained supervision by the nurse, and dietetic treatment.

The bed-treatment of such cases has been further systematically developed by FASTERBROOK who has adopted bed-treatment in the open air during the day time for both his acute and recurrent or chronic excited patients. Regarding the latter class his conclusions are as follows (Journal of Mental Science, October 1907):

Firstly, the patients are undoubtedly improved mentally - that is, they become less excited, less noisy, less restless, and, as their attendants and nurses say, they become more manageable and more contented than formerly. Further, they sleep distinctly better at night and are less noisy at night. This improvement necessitates the use of still fewer sedatives and
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### Normal Temperature of Body

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### Day of Dis.

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### Date of Admission

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Entered at Stationer's Hall. Printed and published by Widdowson & Co. 66 Gate Street, Lincoln's Inn. Gould's Clinical Chart.
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Table: Disease

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Diagram: Temperature graph with trends and notable dates marked.
Notes of Case.

Name: L. Thomson
Age:
Diet:
Case Book No.

Date of admission: January

Entered at Stationers Hall.
hypnotics than formerly.

Secondly, they are distinctly improved physically; their skin is healthier, their appetite is better, and their bowels become more regular. Both in the case of newly admitted and chronic patients undergoing 'verandah' treatment the administration of laxatives has distinctly diminished.

RESTRAINT v. NON-RESTRAINT.

Recourse to the employment of mechanical restraint in its various forms for the treatment of different varieties of maniacal excitement is now extremely rare in British asylums. In the majority of Scottish asylums, strait-jackets, camisoles, gloves, straps, etc., are carefully locked away and may never see the light from the beginning of one year to its end. This is a most happy change from the state of affairs that prevailed in the early decades of last century.

The following account of the work of PINEL and CONOLLY in this relation is given by HAMMOND (A Treatise on Insanity in its Medical Relations 1833):

In 1792, PINEL was appointed chief physician of the Bicêtre, the great lunatic asylum for pauper men in Paris. He found that all the most violent cases were habitually kept chained. He struck off their irons, substituted
kindness for blows, improved their diet, and so ameliorated their condition in other respects that many who were regarded as incurable were restored to the world with their mental faculties again to guide them. This was the first great step toward treating a lunatic somewhat in accordance with the methods employed with rational individuals.

It was reserved for Dr. CONOLLY, an Englishman, in 1839, to demonstrate to the world that there was no antagonism between humanity and science in this matter, and that those methods of management which were most kind and gentle were at the same time the most efficacious as curative agents. When Conolly took charge of Hanwell, there were closets full of instruments of restraint which the attendants were allowed to use at their pleasure. There were strait-jackets, "restraint chairs," muffs, leg-locks, various kinds of complicated apparatus, straps of different varieties, and even chains. Conolly not only took away every form of apparatus calculated to confine the lunatic's body or limbs, but wrote and spoke so eloquently and logically in support of his views that, before long, they came to be recognised as correct in most parts of the civilized world, the only notable exception being the free and enlightened United States of America.

Some idea of what these instruments of restraint
were like may be formed from a glance at the following photographs which represent various articles which were on exhibition at the International Congress upon Neurology and Psychiatry which was held in September 1907 in Amsterdam.

The employment of mechanical restraint in asylum practice should, in my opinion, be almost entirely restricted to that class of case in which the patient makes continued and desperate attempts to injure himself or in which it is absolutely necessary to restrain his movements for surgical reasons. Its employment in other circumstances is unscientific and irrational, and tends to intensify and perpetuate the conditions it is desired to obviate and remove. It must cause a feeling of degradation, resistiveness or sullen despair and vindictiveness in the mind of the patient, if he is not totally unconscious of his circumstances, and its exhibition is not likely to further on desirable lines the education of the nursing staff by whom it is applied.

SECLUSION.

Some maniacal patients display at times such an intense degree of explosive violence that their conduct may be a source of great danger to others, and to themselves also, though not with any true suicidal intent.
Such patients are, as a rule, to be found among the more chronic inmates of an asylum. Temporary seclusion is one of the best ways of treatment in such cases. The separation of the excited patient from others, upon whom his conduct is bound to have a disturbing effect, has a quieting result for him as well as for them. It takes two to make a quarrel, and if the aggressively inclined individual is, for a time, kept by himself, the quarrel-some fit may be tided over and the risk of violence and serious accident avoided. Such seclusion may, in certain cases, be supplemented by the use of various drugs, of purgative or sedative action.

In my experience of the bed-treatment of recent and acute confusional insanity, I have sometimes found that a patient who showed intense excitement and confusion, so long as he was kept in the admission ward with other patients about him, and required the presence of several nurses or attendants to restrain him from jumping out of bed and running wildly about, would, if moved into a single-bedded room, lie quietly in bed, and generally exhibit much less excitement. In such cases seclusion and solitude have their value as therapeutic agents.

**MORAL TREATMENT: PSYCHO THERAPEUTICS.**

The influence of personality is a recognized and potent factor in the affairs of everyday life, and it
certainly loses none of its importance for the physician who has to deal with those of unsound mind. The moral qualities which it is desirable for him to possess are many and exalted. Kindness, equanimity, patience of the most longsuffering nature, sympathetic insight into and consideration for the thoughts and feelings of others, tact, firmness, a sense of humour, the faculty of enthusiasm and a power of sustained interest, these, and many other similar attributes will aid him much in his work, and the absence of them may well render his work at the best irksome and unsatisfactory in its results, if it does not altogether render it impossible.

The writer recently read the following two sentences in Studies in Clinical Psychiatry, BRUCE, (a text-book on the clinical aspects of mental disease): "The treatment of mental diseases which have fully developed is the treatment of physical symptoms of disease. To talk of ministering to the mind diseased is to talk clap-trap and nonsense." The statement contained in the first sentence is true, but in my opinion, that contained in the second statement is false and misleading. The intention of the writer was probably that of emphasizing the need to regard mental disease as physical disease, and to treat it as such, but it would be an unfortunate and retrograde step if the advocacy of such a view should involve its supporter in the neglect of the valuable aid
to be obtained in the treatment of mental disease by moral and personal means.

It is this very factor of personality that distinguishes one attendant or nurse from another of equal intelligence and experience, and explains why the same excitable and quarrelsome patient can be quietly and peacefully attended or controlled by the one individual, while in the presence of the other, everything seems to excite and increase his irritability.

PSYCHOTHERAPEUTICS has received much stimulus in recent years from FREUD'S method of psycho-analysis, but there are many difficulties in its thorough application which involves a somewhat searching investigation of the intimate details of the patient's history. Such details, in the first place, it is impossible to obtain in many cases from the patient, on account of his mental state.

BLOCH (Wien. klin. Woch., Dec. 1907) is convinced of the truth of FREUD'S theory, but is not enthusiastic about the practical side of psycho-analysis in therapeutics on account of the extremely great technical difficulties, which he confesses baulk him in ninety-nine cases out of every hundred. He admits, however, the total hopelessness of the older psycho-therapeutics (consolation, reassurance, etc.) and emphasizes the superficiality and temporariness of any changes produced
thereby.

"Total hopelessness" is, in my opinion, a very erroneous term to apply to the methods of what Bloch calls "the older psycho-therapeutics," and certainly it is difficult to think of anything that could be considered more hopeless than a method in which failure has to be confessed in ninety-nine cases out of every hundred.

Moral treatment by means of encouragement, reassurance, patience, sympathy, tact and other such qualities undoubtedly has its place, and an important place, in the treatment of the insane, and the possession of these qualities by the staff of attendants and nurses in an asylum is of as great importance to them and their patients as a high degree of knowledge of the anatomy and physiology of the human body and brain.

EXERCISE, OCCUPATION and AMUSEMENT.

Rightly regulated and suitable exercise in the fresh air is an extremely important means of treatment in the great majority of the forms of maniacal disturbance. It produces a marked and beneficial effect upon the body metabolism generally. It provides the patient with a change of environment for so many hours of each day. It is a suitable outlet for much of the restlessness and fidgetiness of many patients. No other proof of its
benefits is required than the change that comes over a wardful of patients who have been deprived of their customary exercise on account of inclement weather for 2 or 3 days.

Only in the recent and acute varieties of confusion-al excitement is open-air exercise, as a general rule, neither practicable nor desirable. Such cases, in my opinion, are almost invariably best treated by rest in bed.

Massage, in certain cases, may be tried as a substitute for exercise, but is generally regarded as being of not great value in the treatment of the insane.

The occupations, recreations and amusements that are now provided for the patients in all well conducted asylums are factors of great importance both for the recovery of curable cases, and for the improvement of the lot of those who have been less fortunate.

Outdoor labour in garden and farm, indoor work in the wards and corridors, daily employment in the various shops within the asylum under the supervision of the asylum joiner, plumber, tailor, shoemaker, etc., are all methods of much service in the treatment of male patients. The asylum kitchen and pantries, the laundry, the sewing-room, the dormitories, etc., are all useful means of congenial employment to many of the women patients. The asylum piggery may provide some able-bodied man suffering
from chronic mania with strenuous and sloppy labour, in which he may revel, to the benefit of himself, the institution and the pigs, and without which he would perhaps be transformed into a restless and quarrelsome and destructive patient.

Much may be done to brighten the hours when such work is ended by the provision of dominoes, draughts, packs of cards, billiard and bagatelle tables, suitable literature and music. It has been found that the institution of tournaments and competitions among the patients is always much appreciated, as are also the simple prizes by which the winners are awarded: tobacco and pipes for the men, and articles of dress and adornment for the women.

At the present time in this asylum, there is great interest being taken by the female patients and their nursing staff in an Exhibition of Work which is to be held shortly, at my suggestion, and in the preparation of different kinds of work for which a large number of patients and nurses are keenly occupied.

Means of social amusement such as dances, concerts, entertainments of various kinds, etc., and outdoor games such as hockey, golf and football, cricket, tennis, croquet, bowls, and, perhaps most enjoyable and beneficial of all, but much too rare, curling, are all worthy of the consideration of the physician as therapeutic measures
to be applied to individual cases as may seem best. It is necessary, however, to add the proviso that there are certain of the insane for whom such amusements and exercises may prove to be too exciting.

**Diet.**

The dietetic treatment of mania, except in its recent and acute or toxic forms, consists in the sufficient but not excessive supply of nourishing and fattening, but not stimulating food. Precautions must be taken, if necessary, to prevent many maniacal patients from over-eating, a fault they are very prone to, as a class. The over indulgence may be in wholesome food, to which by some means they have access, or which they have pilfered from other patients, or it may take the form of the eating of rubbish and even harmful materials. The dietary and the administration of food in the case of the patient who suffers from acute mania is a subject that requires somewhat fuller consideration.

From the physical symptoms associated with the early stages of that disease, it is evident that there is much disturbance of the gastric and intestinal functions.

In 2 cases examined by Bruce (Clinical Psychiatry) at the onset of the disease, the digestive power of the gastric juice was found to be almost nil.

Constipation is generally present. In such
circumstances milk is invaluable, and the patient should be induced to take from two to three pints of milk, diluted with aerated waters if desired, in the twenty four hours, and this should be given in small quantities and frequently. Some patients, however, either cannot take milk or dislike it. In such cases the difficulty may sometimes be got over by heating equal quantities of milk and water and slightly sweetening by the addition of sugar. In other cases the milk may be offered in the form of very weak milk-tea.

If artificial forced feeding, by the oesophageal or nasal tube, is required, nothing is so good or so readily prepared as a pint of milk which has been brought nearly to the boiling point and into which one or two eggs, after being thoroughly beaten, have been stirred. Such a meal may be administered three or four times in the twenty four hours.

The various means of artificial feeding are as follows:

(1) Feeding cup.
(2) Spoon feeding.
(3) Nasal tube.
(4) Oesophageal tube.
(5) Rectal feeding.

Where forced feeding by the tube is necessary, my general practice is to employ the nasal tube. I am
unable to recall any case in which I have failed to
administer food by means of it, or in which any accident
or harmful result has arisen in connection with it.
In order to avoid discomfort or pain to the patient, it
is necessary to ascertain before giving the meal that
the food is not too hot.

The requirements for nasal feeding are:- a number
12 or 14 red rubber nasal catheter, with funnel: a
small jug of tepid water: the fluid meal: a widemouthed
bottle containing Castile soap solution: a large basin
and a towel to protect the bed clothes. The operator
stands on the right hand side of the patient, who should
be sitting up or semi-recumbent. After the tube has
been lubricated, it should be passed horizontally along
the floor of the wider of the two nostrils. When the
end of the tube has reached the pharynx, the patient
may be asked to swallow and the tube, in the act of
deglutition, is readily passed into the oesophagus and
so into the stomach. The next step is to pour a small
quantity of water down the tube to clear the lumen, if
necessary, and to demonstrate that the tube is not in the
lungs. The food is then given, the tube flushed with
water and quickly and evenly withdrawn, being firmly
pinched to prevent any of the contents escaping during
withdrawal and possibly being inspired into the air
passages.
BATHS and HYDROTHERAPEUTICS.

The sedative and hypnotic action of the ordinary hot bath, especially if prolonged for a considerable period, has been known and employed in the treatment of mental excitement for many years, but increased attention has of late been paid to this method of treatment on account of the great extension of its use on the Continent, and particularly in Germany. In certain of the German psychiatric clinics, patients are kept continuously in baths at a temperature of 97° or 96° F. for whole days and even for weeks, and the results are reported to be satisfactory.

Personal experience in the treatment of excited states in acute confusional insanity has taught me the great value of a hot bath, prolonged for 30 or 40 minutes, in such cases. In many instances, a patient who had previously been excited, noisy and restless, becomes quiet and falls asleep after such a bath, and the sedative and hypnotic influence may be increased and prolonged by a drink of hot milk when the patient is put back to bed, especially if a dose of 20 or 30 grains of potassium bromide is given along with it. In all cases in which the prolonged hot bath is used as a means of treatment, care must be taken that the patient is in a sufficiently robust condition, and particularly that the heart is not affected. During the bath, the state
of the pulse should be taken as indicating the general effect upon the patient.

Lavage of the stomach with a weak solution of potassium permanganate may be found to be of value in some cases, and particularly in those which, in addition to showing signs of general toxaemia, present evidence of gastric dilatation and atony.

The use of large saline enemata, slowly injected so that they may be retained and absorbed, is a most valuable addition to the method of treatment of acute confusional cases by rest in bed and milk diet. The enemata may consist of from two to three pints of normal saline solution, and at the commencement of treatment may be given daily. My experience has been that, if properly administered, they are almost invariably retained, and one constant result is a marked improvement in the quantity and characters of the urine. The enemata, in my opinion, are best administered by the following method, which is that employed in this asylum: The patient lies on the left side with the left thigh flexed. A soft, pliable, rubber tube - an oesophageal tube does very well - is introduced for a length of 7 or 8 inches into the rectum. The salt solution at a temperature of 90°F. is slowly pumped in by a Higginson's syringe, from 10 to 15 minutes being required to inject 40 or 50 ounces.
VOISIN of the Saltpêtrière is stated to have succeeded in 1860 in hypnotising, with benefit, a patient who was suffering from acute mania; and since that date various authors, particularly in France, have described cases of insanity in which they claimed to have produced improvement or cure by hypnotic influence. Many of these cases, however, appear to have been of an hysterical nature, and much doubt has been thrown upon the true value, if any, of hypnotism in the treatment of insanity.

BRAMWELL (Encyclopedia Medica) states that ROBERTSON, in 1893, hypnotized and controlled the worst case of suicidal and homicidal mania there had been in Morningside for ten years. Robertson concluded that, in insanity and allied disorders, hypnotism was of service in producing sleep, quietening the brain, and preventing outbursts of excitement from passing into mania; also in dispelling fleeting delusional states and minor psychoses, as well as for purposes of management. These conclusions appear to me to be somewhat more extensive and ambitious than results have justified, but I cannot speak from any personal experience of the employment of hypnotism in the treatment of mental disease.

SEDATIVE DRUGS.

One of the most important of sedatives, according to
MACPHERSON (Mental Affections), the most important is bromide of potassium. It differs from many of the other drugs which act upon the brain in this respect, that it seems simply to dull the brain equally throughout. It probably takes the place of the chloride of sodium which would usually be present in the tissues of the brain, and slows the chemical processes by which the functional activity of the brain is kept up, LAUDER BRUNTON (Action of Medicines). Its administration in many institutions is a matter of routine in the case of epileptic patients in doses of from 20 to 30 grains, three times a day. In maniacal conditions, uncomplicated by epilepsy, it is often of the greatest value, either by itself or given along with other sedatives such as cannabis indica, sulphonal, salix nigra. The combination of tincture of digitalis and bromide has proved beneficial in some cases where the use of the bromide alone had not been satisfactory.

Sulphonal and trional, in addition to being effective hypnotic agents, both possess a general sedative and motor depressant action. Sulphonal is especially valuable in the treatment of the chronic type of maniacal patient who suffers from periodic attacks of restless and noisy excitement. In such cases it may with advantage be combined with bromide of potassium. In my experience it is also the most valuable of the sedative drugs in the
treatment of senile restlessness, especially when this is mainly of a nocturnal character. Such patients will be found to greatly benefit from a dose of 12 or 15 grains sulphonal at night time, particularly if it is given in hot water with half an ounce of whisky. Trional acts rather more rapidly than sulphonal and perhaps is best given in hot milk after the patient has gone to bed. The possibility of the occurrence of sulphonal poisoning must not be lost sight of in any case in which the drug is being regularly employed. The earlier symptoms are weakness of muscles with incoordination of gait and speech; the tendon reflexes are abolished; the pupils dilate and react sluggishly; vomiting is not infrequent; the bowels may be loose or confined. Within a short time the urine becomes of the characteristic port-wine colour, the change being due to the presence of haematoporphyrin which is an iron free derivative of haematin.

Authorities differ greatly as to the value of opium in the treatment of excitement in mental disease. My experience leads me to believe that, with the exception of certain cases of excited melancholia in which I have found benefit follow the administration of Nepenthe, the use of opium is more likely to produce harmful than beneficial results, as a general rule. In combination with hyoscine, however, and administered hypodermically
according to the following formula, I have found it of the greatest value in the treatment of extreme and uncontrollable motor excitement such as may be met with in certain cases of acute mania or in epileptic or alcoholic furor and delirium.

\[
\begin{align*}
R/ & \text{ Hyoscinae Hydrobromidi gr. } \frac{1}{100} \\
& \text{ Morphinae Sulphatis gr. } \frac{1}{6} \\
& \text{ Atropinae Sulphatis gr. } \frac{1}{180}
\end{align*}
\]

Hyoscine owes its action principally to its motor-depressant effects. The drug is a very potent one and in all cases in which it has been used hypodermically the patient should be kept in bed on account of the risk of syncope.

Cannabis indica is usually employed in combination with bromide of potassium in 20 minim doses of the tincture twice or thrice daily.

Liquid extract of Salix nigra I have found useful as a sexual sedative in cases exhibiting occasional erotic and nymphomaniacal tendencies.

**HYPNOTIC DRUGS.**

Among hypnotic drugs certainly the most generally useful for all forms of sleeplessness is paraldehyde. It is not a cardiac or respiratory depressant; it acts with great promptness; in the great majority of cases it
produces no harmful after-effects such as headache and drowsiness, loss of appetite, etc. Though by some writers its use is advocated through the day as a sedative, the opposite has been my experience. For its hypnotic effect it is best administered after the patient has been put to bed, in doses of from one to three drachms. Its disagreeable taste and odour may make its administration difficult in some cases, but these may be masked to a certain extent by mixing the drug with tincture of orange or compound tincture of cardamom. The sleep produced by paraldehyde appears to be more like natural slumber than that produced by any other known hypnotic. Paraldehyde puts to sleep and nature continues the slumber; CLOUSTON (Mental Diseases).

Chloral Hydrate possesses valuable hypnotic qualities, but, on account of its action as a cardiac depressant, it is specially contra-indicated in patients suffering from heart disease, and for the same reason is not a suitable drug for continued administration. It should not be administered until the patient is in bed. Its hypnotic effect is often increased and a further sedative action gained by its combination with bromide of potassium.

Veronal is a comparatively recent chemical hypnotic, of rather uncertain action, so far as my experience goes, and not of much value in very acute cases. In certain
patients, however, it rapidly produces a sound and pleasant sleep and appears to cause no disagreeable after-effects. It may be given in doses of from 8 to 15 grains. In some cases a skin eruption has been observed after its use.

Trional has already been referred to, along with sulphonal, for its hypnotic and sedative action. The dose is from 10 to 15 or 20 grains.

Erythrol-tetra-nitrate, in \(\frac{1}{2}\) or 1 grain doses, in patients suffering from sleeplessness with high arterial tension and rapid pulse rate is recommended by BRUCE (Studies in Clinical Psychiatry) for experimental use as a hypnotic, as its action is to reduce arterial pressure. If it fails, then paraldehyde in 2 or 3 drachm doses is the best drug to employ.

Alcohol in some cases is useful as a hypnotic, and may be administered with great benefit in certain cases of senile restlessness, especially if combined with 10 or 15 grains of sulphonal. There are, however, obvious objections to its being recommended for general or continued use. Alcohol is a doubtful friend to a man with insomnia.

**STIMULANTS and TONICS**.

In some cases of very acute mania, with intense and
continued restlessness, there is a tendency to cardiac failure, and in such cases the exhibition of alcohol is often attended by marked improvement in the general condition of the patient, as well as in the condition of the pulse. Three or four ounces of whisky may be given in the 24 hours.

Digitalis, strophanthus and strychnine may also be employed in similar conditions.

Iron, arsenic, quinine, the dilute mineral acids, hepatic stimulants such as succus taraxaci, strychnine, bitter infusions, the compound syrup of hypophosphites, Easton's syrup, Parrish's food, cod liver oil, malt extract, etc., are all of value in the treatment of mental disease, but will certainly do harm if administered in anything like a routine and rule of thumb manner.

Purgatives and Intestinal Antiseptics.

The almost constant association of gastric and intestinal disturbance with certain of the more acute forms of mental disease is a strong indication for the use of laxative, purgative and disinfectant drugs.

Calomel may be used for its alterative and disinfectant action in daily doses of $\frac{1}{2}$ to 1 grain or in larger single doses for its purgative effects. In the latter case, it is always advisable to administer, some
hours later, a full dose of magnesium sulphate. Other hepatic stimulants that may be employed are euonymin, podophyllin, iridin.

Castor oil is an invaluable drug, and I make it a rule, with very few exceptions, that each new patient should be given a dose of castor oil on admission, to be followed by a dose of salts in the morning.

Croton oil, in doses of 1 or 2 minims, may be employed with great benefit to produce free purgation in sthenic patients who are liable to recurrent attacks of maniacal excitement. I am inclined to regard its action as comparable to a form of serum-therapy, so much fluid being withdrawn from the body on account of its strongly hydragogue cathartic qualities.

Aloes, colocynth, elaterium are drugs of not quite so potent a nature that may be similarly employed.

Of intestinal antiseptics, salol (salicylate of phenol) in 5 to 15 grain doses, phenol in 1 to 3 grain doses, in pill, β-napthol 2 to 8 grains and sodium sulphocarbolate, 10 to 15 grain doses, are all useful drugs.

The employment of potassium permanganate in dilute solution for washing out the stomach has already been referred to.

Urotropin is of great value in cases of cystitis associated with putrefaction and bacilluria.
ANIMAL EXTRACTS and SERUM-THERAPY.

Though various animal extracts, such as red bone-marrow extract, cerebrin and myelin, varium (ovarian extract), spermin, pituitary and para-thyroid gland extract have been experimentally employed in the treatment of various forms of mental disease by different writers, we cannot at present be said to possess any definite or conclusive knowledge regarding their action.

It is different, however, in the case of thyroid extract, for the introduction of which into the treatment of mental disease, we are indebted to BRUCE. According to BRUCE (Studies in Clinical Psychiatry), thyroid treatment is applicable only to those patients whose symptoms are not acute. A patient who, after an attack of acute mania, passes into a state of stupor, and under suitable treatment does not tend to recover, but remains stuporose, is a typical case for thyroid treatment. In acute and recent disease thyroid is too much of a cortical excitant to be beneficial. There are, however, many halfway cases where it is impossible to say where stupor ends and dementia begins, but stupor is curable while dementia is incurable. The administration of thyroid in such a case is generally diagnostic.

With regard to the employment of antiserums in the treatment of acute mania, BRUCE (Journal of Mental Science
1904) writes that in five fully developed cases of the disease antistreptococcic serum was given in doses ranging from 10 to 20 c.c. without benefit; and he is of opinion that in any case of acute mental disease where the symptoms are severe, serum treatment is of no value. In two cases, however, which threatened to relapse, 10 c.c. doses of the same serum reduced the pulse ten to twelve beats per minute, lowered the temperature a degree, and apparently cut short the attack. Two further cases of mania which had recovered to a certain point, but showed every evening a tendency to loss of self-control with a quick pulse and slight rise of temperature, were treated with 10 c.c. doses of antistreptococcic serum, given at 4.30 p.m. to anticipate the rise of pulse and temperature. Both patients undoubtedly benefited by the treatment; their pulses did not show the evening rise, there was less restlessness, and both made rapid and excellent recoveries.

CONVALESCENCE.

In the treatment of mental disease in its curable forms, the establishment of complete recovery must be the aim of the physician. Time is the great healer in the majority of cases, though in some it is possible to assist the processes of repair and restoration by various
hygienic and medicinal measures.

The return of sound and refreshing sleep, the restoration of appetite, progressive gain in body weight and, subjectively, a feeling by the patient that he is getting better, are signs that he is on the high road to recovery. The natural anxiety of relatives to remove the patient at this stage must not be allowed to interfere with the further residence of the patient in the asylum. This, almost without exception, should be continued for some weeks after all signs of the previous mental disturbance have disappeared.

"Let patience have her perfect work" is a wise saying that may often be quoted with advantage to relatives, patient and physician alike.
BIBLIOGRAPHY.

Tanzi: Trattato delle Malattie Mentali.
Soukhanoff and Gannouchkine:
Annales Medico-Psychologiques, 1905.
Kraepelin: Clinical Psychiatry (translated by Johnstone).
Clouston: Mental Diseases.
Bruce: Studies in Clinical Psychiatry.
Macpherson: Mental Affections.
Ford Robertson: Text-book of Pathology in relation to Mental Disease.
Bevan Lewis: Text-book of Mental Diseases.
Maurice Craig: Psychological Medicine.
Greenlees: Journal of Mental Science, 1895.
Falret: Études Cliniques sur les Maladies Mentales.
Orr: Journal of Mental Science, 1898.
Magnan: Le Delire Chronique à Evolution Systematique.
Da Costa: Clinical Haematology.
Ballantyne: Manual of Antenatal Pathology and Hygiene.
Easterbrook: Journal of Mental Science, 1907.
Hammond: Treatise on Insanity in its Medical Relations.

Bramwell: Article on "Hypnotism" in Encyclopedia Medica.

Lauder Brunton: Action of Medicines.

American Journal of Insanity.

Annales Médico-Psychologiques.

Journal of Mental Science.

Journal of Nervous and Mental Disease.

Lancet.

British Medical Journal.

Review of Neurology and Psychiatry.

Rivista di Pathologia Nervosa e Mentale.

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