broken up, or, in physiological terms, increasing its irritability. This increased rapidity of decomposition and reconstitution implies a greater amount of waste and need for increased quantities of nutriment, consequently an increase of all of the other organic activities implied. Now if from any cause the general organism is incapacitated for supplying the increased quantity of nutriment, there must necessarily be an imperfect reconstitution of the nerve cell and a consequent reduction in type with restriction of activity, which, if continuous, finally brings about dissolution and destruction of function.

It may be assumed that the new-born child has a brain mass with a definite potentiality and endowed with certain hereditary tendencies; that the mental life of the adult individual is the sum of the products resulting from the influence of experience upon this potentiality and of environment upon the inherited tendencies. In the developed individual the general nervous system has a dual function—the direction of the somatic and the correlation and co-ordination of the mental activities. Just as the functioning of the brain and general nervous system in the direction of somatic life is a manifestation of motion, so probably is the functioning of that part of the brain which presides over mental activity, their interdependence and dependence on the other functions which they direct and control being analogous to that existing among the vegetative organs. Again, this definite mode of reception, comparison, and relation of external and internal impressions, which we call mental activity, involves special functioning, with resulting tissue change, which increases and decreases in a direct ratio with its activity. That this function of the brain is a comparatively separate one, carried on in a great measure independently of the general manifestations of nervous energy, is shown by its absence in the new-born child and in the fact that in the adult the gravest disturbance of this function may occur, or even its entire extinction, without materially interfering with the vegetative existence of the individual. There is an interdependence, however, which is essential to the proper performance of both functions. The impressions—the relation and storing of which, with the concomitant direction of vital energy, which forms the material with which the psychic function has to deal—are brought to it through the channels of the general nervous system for elaboration into thought and ideas, and it follows that the proper performance of the functions of the brain depends upon the relative perfection of its parts and their adaptability to the demands to be made upon them. Furthermore, when we consider that under the influence of the general disturbance present in insanity, with the intensification or abeyance of the organic activities associated with the mental disturbance, it will be readily understood how not only the nutritive and eliminative changes in the brain will be interfered with, but the functioning of the rest of the organism as well, so that the work done by each organ will be incomplete and aberrant in form. Thus the general and local conditions, acting and reacting upon one another, prevent the re-establishment of normal functional activity in the brain, and bring about the persistence of those conditions, primarily dependent upon some temporarily acting cause, which result in the upsetting of an unstable nervous organization.

We have then to consider hereditary or acquired imperfections in the structure or functional potentiality of the nervous system, the influence of the general changes in the organism, the reaction of the perverted functioning of the brain on the general organism, and the implication of certain portions of the general nervous system by destructive changes. Although not yet demonstrable, it is highly probable that there can be chemical imperfection of structure, even where there is no morphologic change apparent, and that this imperfection or incompleteness may operate to produce an abnormal tendency to decomposition following the application of a slight incident force, or, expressing the same conclusion in physiological terms, a tendency to react excessively to slight stimuli. Applying this definition to the nervous system, we see this tendency manifested in an exalted but indefinite and non-persistent mental and motor activity, examples of which are a matter of daily observation among so-called nervous people. Again, hereditary or acquired conditions may determine a defect or impeding of development, which will show itself as a tendency in an unstable nervous organization to break down in certain directions, whereas integrity of structure and normal functioning may persist throughout in other directions.

We have next to consider that through disease or even disturbance of the circulation in the conducting tracts of the nervous system, either in the path of sensory or motor impulses, or in some of the subsidiary centres, perverted impressions may be carried to the cortex. Such aberrations of function occur constantly in the presence of fatigue, mental strain, or bodily disease among those who are not insane. How easy it is to account for their exaggeration and persistence if they take place in a nervous system which is primarily defective. Lastly, we have to consider the influence which impaired nutrition, occurring as the result of exhaustion of vitality, either through overwork or bodily disease, may in the presence of the factors just described have in determining an outbreak of insanity. Here again a little reflection will show that the most profound exhaustion from overwork or bodily disease may occur without producing insanity in the ordinary individual. What, then, is the necessary factor? Obviously an unstable nervous system or one with a limited potentiality. The unstable nervous system will be easily upset, and as a result its functions will be manifested aberrantly or in excess, as we see in hysteria, neurasthenia, depression with or without emotional disturbance, maniacal excitement, or delirium. The extent of this disturbance of equilibrium will always be in proportion to the degree of instability and the nature of the exciting cause. In those cases in which the strain upon the vitality of the individual has been prolonged or excessive, there may follow stupor or coma, as seen in typhoid conditions, after surgical procedure, during the puerperium, in acute alcoholism, and in some forms of chronic intoxication. In the nervous system of limited potentiality the tendency will be, under the conditions described, toward the establishment of the process of degeneration, which will, in its turn, vary in degree and extent with the amount of limitation and the nature of the strain. The unstable brain of necessity also has a limited potentiality, so that even after the mildest outbreaks of mental disturbance there is some mental reduction which is permanent. Again the progress of degeneration may be so slow or retarded by changes in the environment of the individual that years may pass with but slight alterations in character being manifest—usually in the form of lessened self-control, increased self-consciousness, suspicion, or a tendency toward confusion in or after unusual or extended mental effort. For obvious reasons physical disease, either acute or as manifested in the changes accompanying chronic degenerative processes in the vegetative organs, would also make manifest the disturbance of an unstable nervous system or the presence of degenerative change resulting from limited potentiality. These conditions constitute what are ordinarily called the border-land manifestations of insanity, because the changes are as a rule slight, take place slowly, and although there may be explosive outbreaks accompanying them, they are short-lived and do not suggest their real origin. The family and friends of the patient having become accustomed to the changes in his character, the presence of actual mental aberration is not suspected nor recognized until some marked manifestation of untoward conduct makes the true condition apparent. In these border-land states the patient is commonly fully alive to his condition, even if he does not appreciate its significance. The difficulty in making a correct diagnosis does not result from failure to recognize these vague and ephemeral manifestations, but rather from the inability to appreciate their extent, because in the one case they may go no further than the temporary loss of control, confusion, or delirium, while in another, even where the conditions in the environment of the patient may apparently be favorable, the outbreak will be prolonged indefinitely and the mental reduction may be permanent. To this class belong those individuals who develop the different phobias or who have persistent impulses toward foolish, vulgar, or criminal conduct, as illustrated by involuntary mimicry, coprolalia, kleptomania, and sexual inversion or perversion. The only guide we have for determining whether or not the mental aberration will be temporary or permanent is the history of the individual as to the extent to which it reveals instability or defect. As a rule, the children of the insane and neurotic are unstable, while the children of those suffering from diathetic conditions are defective. Therefore in the former the presumption is in the direction of the mental disturbance being temporary, although liable to recur. In the defective, however, the probability of the eccentricity and erratic conduct being the beginning of a permanent degenerative process is very great, especially so if physical exploration shows the presence of chronic degenerative change in the vegetative organs.

Examination of Patients.—In conducting the examination of a person supposed to be insane, it is important to eliminate the personal equation in yourself, and to be able to recognize its influence upon those who have the patient in charge. Next come the recognition and appreciation of the natural capacity of the individual, the limitation of his mental horizon, and his attitude toward his environment. You would not expect the same clearness of definition in the conceptions of an illiterate man existing in primitive surroundings as you would in those of a cultured man with a wide mental horizon. As a rule, the insane present some or all of the stigmata of degeneracy, both physical and mental; the physical stigmata being more common in the defective, the mental in the unstable. They represent different degrees of defect in the development of the individual, and in the nervous system limitations of potentiality. That is, the individual with these evidences of degeneracy present, and the limitations which they imply, might under favorable conditions live his life through without mental disturbance, but does break down under the stress and strain of social and industrial competition, as the result of disease, shock, overwork, or excessive exposure; and this breakdown will be temporary or permanent according to the degree of defect in his nervous organization and the extent of the strain. Furthermore, none of the symptom groups on which classification has been predicated are distinct entities, but, on the contrary, all of the different manifestations of mental perversion may be, and often are, present in a single individual during the course of an outbreak of insanity, while mental reduction is common to them all. Syphilis, gout, rheumatism, alcoholism, phthisis, traumatism, etc., are not direct causes of definite forms of mental perversion, but rather, by their effect in interfering with nutrition and elimination, the means of exhausting the limited potentiality of the individual; and the mental perversion which follows may manifest itself in any form. For example, the syphilitic degenerate may, when insane, be either exalted or depressed, excited or agitated, the victim of hallucination, well-defined delusion, or mental reduction may be profound from the beginning of the outbreak, and dementia supervene without any manifestation of active perversion; and so with other causes of somatic degeneration. Psychologically, analysis of the aberrations of mental processes shows that they are not of different kinds, but vary in degree. Hallucination of the special senses is either pleasurable or painful. The picture formed and the delusion which results has the same characteristics. That is, all insane people when exalted have agreeable conceptions, and when excited or depressed have persecutory or depreciatory ideas, their definition depending upon the mental capacity, extent, and variety of the life experiences of the individual. If you will go through a hospital ward, carefully observing each individual, you will find one patient sitting with rapt intent expression on his face; another with head turned to one side as if listening intently, the expression varying from complaisance or self-satisfaction to anxiety, dread, fear, or anger. Another will be standing, excitedly gesticulating and denouncing. Still another, sitting with bowed head, a sullen and gloomy expression on his face, suddenly straightens up and strikes the one nearest him, again lapsing into sullen gloom, or continuing the assault, and accompanying his blows with a tirade of denunciation or abuse. All this seems purposeless, but careful observation and questioning will disclose the fact that each of these individuals has heard or seen, and often both, voices and presences, agreeable or disagreeable, pleasing or threatening. Perversions of the olfactory, gustatory, tactual, and muscle senses may be and often are present as concomitants of the belief formed out of the primary illusion, resulting from the auditory or visual hallucination. Visceral consciousness is commonly a most potent factor in the development of the belief that poison is being administered, and the sinking sensation, characteristic of some forms of intestinal indigestion, a bruit of the abdominal aorta, and all sorts of gastric sensations, with the suffocative feelings attendant upon gastric distention, are perverted to signify the effect of poison, the administration of anæsthetics or narcotics, and electric influence; while among the lower types these sensations are significant of occult or demoniac influence.

All of us hear sounds, see sights, and perceive odors and tastes. We are subject to disagreeable tactual sensations and to visceral consciousness, but we correct our false impressions through the influence of environment on our consciousness. Why is it, then, that the insane man fails to correct his false impressions? Referring to what has been said about the morbid self-consciousness and limited self-control of the unstable and defective, we can easily see how, as the result of mental strain or physical exhaustion, the tendency to introspection would be exaggerated. If this persists, irritability shows itself, and suspicion follows. The actions of others, heretofore a matter of indifference, take on a new meaning and have especial significance. In the development of insanity, after the persistence of irritability and suspicion for a time, with the continually increasing tendency toward introspection, and the relation of external phenomena to self, dread is added, ordinary sights and sounds have a special purport, and are associated with experiences in the life of the individual which have been untoward or unfortunate. As a result of the constant suspicion and dread confusion supervenes, and the voices of those by whom the individual is surrounded are heard to utter threats and sneers, to make accusations, or suggest ulterior motives for ordinary actions; while to the sight, the conduct of friends or relatives assumes a corresponding significance. The individual becomes impervious to evidence or demonstration. The persistence of sounds and sights forms a picture of that which is dreaded and feared. Suspicion ends in the certainty of belief, the nature of the belief varying with changes in the environment, governed largely by the previous experiences of the individual, changing in form, but always having the same substantive basis, the definition of the belief varying with the amount of mental reduction. So that where this is slight the definition may be constant in form, as in the paranoiac, or in that analogous form of chronic delusional insanity so common after the climacteric in both sexes. On the other hand, the definition may vary from moment to moment, as in the rapidly changing phantasmagoria present in acute mania, or be only suggested, as in the vague uneasiness associated with acute depression.

Insanity, although never directly due to bodily disease, is often precipitated by it and is always accompanied by more or less disturbance of the bodily functions. Again, although the tendency toward insanity is in the majority of cases hereditary, actual insanity in the parents or near relatives is not the only hereditary condition operating to produce mental disturbance. Consumption, rheumatism, syphilis, alcoholism, or any constitutional imperfection in the parents is equally potent in bequeathing an unstable

nervous organization to the child, with the resulting tendency to break down mentally under the influence of bodily disease or mental strain. Conditions arising during the pregnancy and labor of the mother may influence the mental stability of the child, as well as the occurrence of infantile disease accompanied by prolonged high temperature, convulsions, or great exhaustion. Unfavorable conditions surrounding the advent of puberty, the progress of adolescence, and in women accidents or diseases connected with pregnancy and labor, the puerperium, and the period of lactation, or the advent of the climacteric are often exciting causes of insanity in those predisposed. In men, prolonged exposure, overwork, and insufficient food, syphilis, alcoholism, or severe acute disease accompanied by high temperature or exhausting discharge will operate to produce a similar result.

As insanity is manifested by the perversion of the normal activities of the individual, both bodily and mental, therefore the first thing to determine is the normal plane of his bodily and mental activity. To this end inquiry should be made into his habits and conduct before the outbreak of mental disturbance, especially as to the degree of intelligence and his moral qualifications, his resemblance to other members of the family, and wherein he differs from them. This information, together with the family history, will furnish a standard by which to judge how great a departure from the normal his present condition indicates. A careful study of the statements and beliefs of the patient should be made, his reasons for them, also the foundation for his beliefs and the motives for his conduct. These inquiries will determine the presence of perversion of the special senses, while the degree of intelligence the patient manifests in defending and explaining his conduct will indicate the presence and degree of mental reduction. In women it is important to know at what age they began to menstruate, and whether the function was established without systemic disturbance, the presence or absence of headache or pain, and whether the periods are too frequent or delayed. If she is a married woman, inquiry should be made as to her pregnancies, their number and frequency, the condition of the general health during the period of gestation, and whether there had been any alteration of character or habits; also as to the character of her labors, the history of the puerperium and period of lactation, and the degree of regularity in the performance of the menstrual function between her pregnancies. If she has never borne children, inquiry should be made as to the occurrence of miscarriage; or, if she is sterile, whether the sterility is dependent upon imperfect development, deformity in the sexual organs, or is the result of disease. These inquiries will show the relation, if any, between the mental disturbance and the condition of the reproductive organs, especially if menstrual disturbance or pelvic disease have been associated with the onset of the insanity. In both sexes the condition of digestion and the excretory functions should be investigated. Finally, the nature and kind of occupation to which the patient has been accustomed, whether it has been recently changed, made more laborious or confining, and especially if the change has been from an active outdoor life to a sedentary one. Nothing in relation with the functions, occupation, and surroundings of the patient will be unimportant.

Feigned Insanity.—To feign insanity is very easy and yet very difficult. The reason for this paradox is that the ordinary individual is almost certain to blunder, so that he will be recognized as a malingerer. However, the man of intelligence who is a good actor may after careful observation imitate the manifestations of insanity so closely as to defy detection at the time. Another paradox involved in this subject is that the insane may and do feign insanity. This feigning of insanity by the insane most frequently occurs in connection with the criminal acts of those who have been for some time on the borderland, and who have been able, until the outbreak which culminated in the untoward act, to control their conduct. Recognizing what must follow, they mimic the outward manifestations of active mental disturbance, in order to shield themselves from the consequences of their acts. Others exaggerate their condition to frighten those about them or to attain some object they have in view. The form and manner in which the feigning of insanity may be attempted will be determined by the character and experience of the malingerer. Naturally the man of education will be guided by the knowledge gained from reading and observation, while the illiterate individual will follow the suggestions of tradition and folk knowledge as to the supposed characteristics of insanity. Those who are unfamiliar with insanity do not recognize its manifestations unless they take some active form, such as violent excitement or bizarre conduct. They are loth to admit the fact of insanity if the individual answers ordinary questions intelligently and claims to be sane. So that the malingerer is naturally tempted to extravagance in the manifestations of the mental disturbance he is feigning, and he especially tries to indicate by his conduct and conversation the absence of intelligence. He may appear to be stupid, the victim of hallucination, incoherent, delirious, or maniacal, but all of these are as a rule exaggerated. The man who is really insane believes that he is not, and is constantly at pains to argue the matter. This is not true of the man who would feign insanity. The malingerer most frequently presents the phenomena of amnesia, especially if his conduct has been criminal, and along with these manifestations he will mimic the physical expression and personal indifference of dementia. The conduct of the really insane man is always out of consonance with his environment, and in those forms of mental disturbance which are usually feigned there is always considerable mental reduction which is persistent during the attack. Herein is the final test of insanity, for mental reduction cannot be successfully imitated all of the time nor for any length of time.

We have then to consider, in making a diagnosis of feigned insanity, the conduct of the individual, and, if it is manifested in criminal acts, its relation to his environment at the time, and consonance with his character and habits, which are usual and habitual; whether the amount of mental reduction present is in relation with the kind and degree of mental disturbance, and if the mental reduction is persistent. We have next to remember that the really insane man does not realize his condition, and his morbid self-consciousness leads him, if he is intelligent enough, persistently to assert and argue his belief in his sanity. Finally, the crux of the question is what is meant by the term. Legally a man might be considered to be feigning insanity when scientifically he is not, for it is doubtful if the effort to feign insanity is ever made by a perfectly sane man. There must be the morbid egotism of the neurotic to prompt the man to simulate a condition which the normal individual looks upon with dread and horror. *Harry A. Tomlinson.*

VII. INSANITY: GENERAL PROGNOSIS.—*Statistics.* Thurnam's frequently quoted paragraph giving his conclusions from a generalization of the histories of the patients at the York Retreat will best introduce this subject. They possess a certain value, as he was able to trace the after-history of every patient who had been at the retreat *in whom death occurred*. He wrote: "In round numbers of ten persons attacked by insanity five recover and five die sooner or later during the attacks. Of the five who recover not more than two remain well the rest of their lives. The other three sustain subsequent attacks during which at least two of them die."

These statistics barely approximate the truth, and are open to several objections, the chief of which is that they represent hospital cases only, which are most likely to be of the severe, difficult, and chronic variety. They cover therefore but part of the ground, and a vastly different idea of the prospect of cure would prevail if the undoubtedly large number of cases—chiefly melancholia—which recover without going to a hospital or even (as Blandford believes) to a doctor, could be included. At the same time these results are instructive and sufficiently

accurate to enable one to make a fair estimate of the termination of insanity in general. They show plainly that not a small proportion of patients have incurable forms of mental disease, characterized in the main by a succession of attacks which are followed by temporary returns to a degree of rationality sufficient to warrant the name of "recoveries."

Importance of the Form of Insanity.—If we analyze these cases we shall find two classes of patients, one in which the attacks occur very irregularly and are of a variety of forms—mania, melancholia, stupor, confusion, etc.—modified, it may be, by minor conditions, such as katatonia or catalepsy. Moreover, succeeding attacks are rarely of the same kind. In these patients the interval of so-called recovery is of the nature of a remission of varying length, and the mind, though sometimes clear and apparently sound, never again returns fully to its normal condition, and in the succeeding intervals becomes more and more impaired until, in the majority of cases, complete mental disorganization or dementia closes the scene in a few years. These are the cases of dementia præcox.

In the other class the attacks are usually relatively short (from six to twelve months); they occur in the main at fairly regular, periodical intervals; they are never other than mania or melancholia in their nature, and the intervals are characterized by complete return to reason and normal health. The intervals, moreover, are in some cases of long duration, lasting it may be for years. In many instances the combined duration of all the attacks represents but a small proportion of a patient's lifetime. It is safe to say that, excepting in circular insanity, it is only a minority of cases of this form in which the attacks occur within two years of each other, although they are likely to recur more frequently with advancing years. It is, however, impossible to predict the length of the intervals, as they are more or less irregular, although it may be approximated after several attacks have occurred. This form is now known as manic-depressive insanity.

It is obvious, therefore, that the difference in the outcome of these two varieties is a wide and important one. At the same time it is sometimes exceedingly difficult to distinguish between them before a second attack has occurred. Nothing can emphasize more strongly than these groups of cases the necessity of a correct diagnosis as a preliminary to even a fairly accurate prognosis in mental disease. These indications are fully considered in special articles below on manic-depressive insanity and dementia præcox, where will also be found the prognostic indications relating to the subordinate states of mental disturbances, such as mania, melancholia, stupor, confusion, and the like, which distinguish these diseases.

Heredity.—The chief element in the prognosis of mental disease is faulty heredity. This is the most prominent factor in the causation of idiocy and imbecility and of the different forms which degenerative insanity assumes. Those included under this head in the Handbook are: paranoia, manic-depressive insanity, circular insanity, the constitutional psychopathic states, including congenital neurasthenia, compulsive insanity, impulsive insanity, and contrary sexual instincts; also "moral" insanity and *folie à deux*. When any of these conditions are unmistakable the disease is sure to be of the chronic type, whether its progress is uniformly degenerative or manifested by periodical attacks.

It is not an uncommon belief among non-medical people and even general physicians that the inheritance of insanity means impossibility of recovery in any sense from an attack of insanity. On the contrary, so far as the attack goes, certain strongly hereditary cases make, as has been shown, good recoveries, although they are more liable to relapse than are those in which the hereditary tendency to disease of the mind is absent. A bad family tendency to insanity may be shown in actual and marked insanity of certain members, while the rest are sound and strong and appear to have the normal amount of resistive power to disease. This, however, is a better inheritance than less distinct mental disease and more unsoundness and a low state of mental and bodily health *in the family generally* in the forms, for example, of various neurotic disorders, convulsions in childhood, weak-mindedness, bad habits and propensities, and physical defects.

*General paralysis of the insane,** also known as paretic dementia, general paresis, and popularly as "paresis," is, it can be safely said, invariably fatal. There are, to be sure, a few, very few, examples of recovery reported by competent observers; but they are not by any means incontestable, while the usual alleged cures are either due to faulty diagnosis or are the result of premature conclusions during some remission in its course. The disease has certain features alluded to in but few text-books, the proper interpretation of which is essential to a correct diagnosis. It is a frequent experience of the alienist to find that favorable prognoses have been made in cases of general paresis by general physicians who have mistaken for ordinary insanity attacks of "mania" or "melancholia" that are really of paretic origin, and which, far from being idiopathic, functional psychoses, are simply symptomatic groups or syndromes occurring in the course of the grave structural disorder of the brain—general paresis. As mania, and especially melancholia, have the same manifestations, whether occurring independently or in the course of general paresis, it is not surprising that such errors occur where the opportunity for observation is necessarily so limited as is the case in general practice. It is also a common error to mistake the incipient stage of general paresis for neurasthenia or hypochondriasis, so closely does it simulate these disorders in many cases. The consequent prognosis may lead to serious results, for, as Berkley points out,† what slight hope there may be in the treatment of paresis can obtain only in those cases in which the therapeutic measures are undertaken in the earliest stage of the affection; added to this, its early recognition is necessary to protect the family of the patient from serious ethical and financial misadventures as well as from possible brutalities.

The duration of general paresis is often perplexing; and although we may rightly say in the majority of cases that the end may come at any time within three or four years from the onset of active symptoms at the furthest, according to the kind of care the patient receives, the nature of the attack, or the severity of the intercurrent affections to which it predisposes its victims, there is considerable variation in the length of its different stages, whether of remission or of progress. We also meet with surprises occasionally in the way of temporary recuperative changes, both mental and physical, which are little short of startling, and which it would have seemed folly to predict. When epileptic seizures are frequent and are a marked feature from the first, there is great danger that the patient will be cut off by a series of them in the form of the epileptic status.

But it is the stage of remission in general paresis which is responsible for most of the mistakes of diagnosis and prognosis that are made in this disorder, as only the trained observer can find evidences of mental failure in many of these patients, who at this stage may appear to their relatives to be entirely well. That, however, an exacerbation is sure to follow sooner or later, in spite of this apparent return to health, and that only by the most careful and quiet living can it be long delayed, is the only opinion to be given that is consistent with fact. It is often months, and occasionally years, before the signs of degeneration recommence and our prognosis is finally verified.

The Time of Life at which insanity occurs also modifies the prognosis; as in physical so in mental disease the young, especially females, are far more likely to recover than the mature and the old. It has been estimated that sixty-three per cent. of the "recoveries" from insanity take place before the age of twenty-five. At the same time the young are more subject to relapses, and it is at

* See article on *General Paralysis*, p. 86 of the present volume.
† Berkley's "Mental Diseases," p. 464, first edition.

this time of life almost exclusively that dementia præcox appears.

The menopause is another period of life at which many cases of insanity recover; but the disease is usually of long duration, not ending until the cessation of the menstrual function is complete. It must be borne in mind, however, that genuine "climacteric insanity" is rare, as cases in which the menopause is unmistakably the sole or even the chief cause of the trouble are far less common than is usually supposed.* Melancholia of involution is now thought to cover most of these cases. Predisposition to mental disease occurring at this time, is the rule, but the insanity is also largely due to diminished vigor of body and mind generally and the failure of the system properly to readjust its powers to meet the changed conditions rather than to any local change. This form of insanity not infrequently appears as the single attack of a lifetime, and, with confusional insanity in the mature, forms the bulk of permanent recoveries.

Old age, on the contrary, is obviously the most unfavorable time for an attack of insanity; but here it is death from exhaustion that is to be feared rather than death of the mind alone. Even at this time of life, however, there is risk in predicting that recovery is impossible, as it is among the aged that the marvellous cases are occasionally met with of complete cure of acute melancholia in which exhaustion seemed inevitable from the extreme agitation, depression, refusal of food, and consequent emaciation. Such miracles have few counterparts in physical disease.†

The Physical Condition before the trouble begins is, if good, a less favorable sign than might be supposed, as it is the mild, slowly developing case with gradual and permanent mental deterioration in which the bodily health is but little disturbed. On the other hand, the acute, severe, rapidly culminating, and for the most part presumably curable cases are often preceded by a season of reduced physical health and strength and loss of flesh, which continues throughout the acute stage.

The Natural Mental Capacity also makes quite a decided difference in our prognosis, as a person with a strong and active intellect and even keen sensibilities before the attack, seems to offer greater resistive powers to disorders of the mind when once established than does an imperfectly developed mind and an insentient nature. The immediate cause of an attack, when well limited and appreciable, which is not often the case, indicates a good chance of recovery; for example, sudden bereavement, shock, accident, money loss, the puerperal state, lactation, etc.

Treatment affects the prognosis in no small degree, especially the time of its adoption, the patient's chances growing fewer the longer it is delayed. It is needless to emphasize by statistics this well-established and well-known fact of the importance of early treatment (not necessarily that of an asylum) away from home. The kind of treatment also has a decided influence; and the greater prevalence, both within and outside of institutions for the insane, of care and treatment directed to the needs of the individual patient, is sure to be a most potent factor in increasing the number of cures, or at least in preventing relapses and relieving the chronic cases. The practice which is still largely unavoidable in public institutions for the insane, of placing acutely violent patients in a perhaps overcrowded ward for obnoxious and equally excited patients in different stages and forms of insanity, as well as of different classes of society it may be, can but retard, if it does not actually prevent, recovery in many cases.

The Minor Conditions of an Attack of Insanity and its individual symptoms often tempt us to predict the outcome; but it is a hazardous practice. There are many, however, that are useful to know when properly estimated —like minor symptoms of physical disorders—as simply corroborative indications. Of this order is the important prognostic point that is furnished by the way in which an attack begins, as in general a quick onset means a fairly quick recovery, excepting of course cases of *delirium grave*, otherwise known as typhomania and as acute delirious mania or melancholia, a form which is extremely dangerous to life, especially in old people. *Per contra*, a long antecedent period of mild mental symptoms or peculiar conduct betokens chronicity.

Another indication that is quite reliable is the familiar one that when improved nutrition keeps pace with the mental gain, as evidenced by the patient's weight, the chances of recovery are good, while an improved physical condition unattended by mental improvement, or *vice versa*, is a bad omen. Marked and protracted hallucinations of hearing, especially when they develop late; the creation of new words; the adoption of a pathological language—of a peculiar costume; a tendency to self-decoration, special attitudes, hoarding, etc., mean, as a rule, incurability. Incoherence and persistent delusions without excitement are usually signs of confirmed mental weakness (Kirchoff). This is frequent in hebephrenia. Absence of the feeling of satiety, eating or drinking nauseous articles, are usually found in unfavorable cases. In continued sexual excitement recovery is rare; but the practice of masturbation, if discontinued, may not interfere with recovery.

Among the surest indications of recovery is the recognition of former delusions as such.

The intervals of calm and rationality which suddenly and unexpectedly occur, especially in cases of melancholia and confusional insanity, are very deceptive, and often tempt one to make a prognosis of speedy recovery that is soon found to have been premature. It is only when these sudden recoveries of reason follow a period of decided gain in sleep and general health that they are permanent as a rule. Generally speaking, the mind is clouded over again in a day or two, and the disease runs its course with renewed intensity. It is safe, nevertheless, to predict that *ultimate* recovery is probable in cases that are characterized by such intervals of rationality.

When hypochondriacal delusions are a marked feature of a case, the outlook is bad, especially if the subject is advanced in years.

Persistent refusal of food, especially when due to hypochondriacal delusions and when prolonged, is an unfavorable sign. Recoveries may occur in such cases, as in other extreme conditions; but they are as rare as they are surprising.

"Mild" cases of melancholia, which are apt to be treated at home, are very deceptive in respect to the probability of suicide; and the more rational the patient the more crafty and deliberate he will often be in carrying out his plans. It not infrequently happens in such cases that a desperate attempt at self-destruction is the first warning given the family or the physician of the suicidal propensity. Careful and frequent examination of the patient's line of thought will usually reveal the desire for suicide, after which it is a grave risk to attempt to give such a patient proper supervision at home. The desperate and violently determined melancholiac, whose efforts are constant and unremitting owing to the strength of the suicidal impulse and in whom there is little sign of reason, is doomed to dementia unless there be an early turn in the disease.

The suicidal tendency is often looked upon by people in general, as a particularly ominous feature as regards recovery, whereas it is a frequent and logical manifestation of a curable form of insanity—melancholia. The chief danger is, of course, to life, before proper measures for the patient's protection have been taken, after which his chance for recovery is quite as good as that of any case of melancholia without such tendencies.

Finally, the best recoveries are seldom perfect, and a large proportion fail to recover their former mental condition in full. As it has been well put by Folsom:* "There is left some change of character, no matter how slight, some moral perversion, irritability, impaired will, lessened power of self-control, diminished mental capacity—some lowering of the intellectual or moral standard, some deterioration of some kind." This is also true of the physical condition, which in many cases never fully returns, and the power of endurance especially proves to be much diminished.

Regarding prognosis as to life, it may be said that, excluding the suicidally inclined, in relatively few cases is death to be feared as a direct consequence of insanity that is not organic, *e.g.*, general paresis, senile cases, and those consequent on focal lesions. The others are largely from one group—the delirious manias—the form of death being exhaustion from continuous, intense, and often febrile excitement. Death is much more likely to take place in the beginning of an attack, as that is the time of greatest violence and strain. It is then, too, that refusal of food and suicidal attempts are most common.

Henry R. Stedman.

VIII. INSANITY: GENERAL TREATMENT AND CARE OF THE INSANE.—The scope of this general article on the treatment of insanity is shown by the following headings under which the subject will be presented, viz.: (1) Prevention and State Medicine; (2) Treatment and Care in Institutions and in Private; (3) General Emergencies in Psychiatry; (4) Medication; (5) Surgical Measures; (6) Psychiatric Hygiene (Hydrotherapy and Climatotherapy included); (7) Dietetics; (8) Mental Therapeutics; (9) Convalescence and Protective Aid. The treatment of the special forms of mental disease will be considered in various separate articles by different authors.

Prevention and State Medicine.—Broad preventive treatment of insanity has never been undertaken, but it is time for some concert of opinion and action between physicians and lawmakers to control such causes of the disease as exist widely in the whole fabric of society. Heredity as a chief source might be diminished in a measure by the enactment of wise marriage laws, prohibiting the reproduction of the kind *in vinculo matrimonii* by idiots, imbeciles, lunatics actual or imperfectly recovered, confirmed epileptics, the chronically alcoholized, and neurotic subjects with a double parental taint of lunacy. The State, financially burdened with the increasing numbers of her insane wards, should adopt various wide and far-sighted measures of prophylaxis. The standard of knowledge of mental disease in the medical profession should be raised. Thorough and practical instead of nominal instruction in psychiatry should be made compulsory in all medical schools, and medical degrees or licenses should not be granted on State examinations to those incompetent in this branch, for in nine cases out of ten the general practitioner has to solve alienistic problems without the help of the mental expert. The State should disseminate widely by free literature and lectures common-sense ideas of the nature and causes of insanity, of the means of its avoidance, and seek to remove the false dread and stigma which tend to hide the disease until it is past cure. In all the largest cities the State should establish hospitals for the clinical observation and continued treatment of incipient and other forms of mental disease without legal formalities or financial obstructions. The officers of such hospitals, known for their skill in nervous and mental diseases, should give prophylactic advice as to feeble children, exceptional curriculum of studies in schools, permissible marriages, and all the adult relations of life in neurotic families.

Treatment and Care in Institutions and in Private.—It would appear from late census returns in this and other countries that about seventy per cent. of those mentally defective and insane are cared for in institutions. Large numbers, however, escape recognition and enumeration.

Colonies are among the best provisions for the insane. The oldest is at Gheel, Belgium, agricultural and under medical and governmental control. Another successful colony is at Clermont-sur-Oise, France. In connection with a central institution agricultural colonies also exist at Alt-Scherbitz, Saxony, Ellen near Bremen, Slup near Prague, Ilten near Hanover, and at Reggio-Emilia, Italy.

The Family System of the boarding out of the insane in private families has long been found practical in Scotland and in Massachusetts and Wisconsin also.

Hospitals for the insane, well organized under public supervision, exist in most of the States, and some have a cottage system and agricultural colony provisions. Their chief defects are overcrowding and lack of special wards and adequate means of treatment of acute cases and of the criminal and epileptic insane. Private hospitals for the mentally diseased are found in most of the States. Some of them are officered by mental experts, and are indispensable resorts for those wishing to avoid public hospitals and unable for various reasons to be treated in their own homes. There are also unlicensed sanatoria, water cures, hygienic hotels, and health resorts, more or less well conducted, in which the insane unfortunately often remain until their best chances of cure have passed. The family physician in the majority of instances will have to consign his mental sufferers to the public hospitals for reliable cure at a moderate rate, but exceptionally the means of the patient will admit of the choice of a well-appointed private hospital with trained nurses, few patients, and the comforts of home and completely individualized treatment. Treatment in private at the patient's house is expensive, in view of fees of nurses and physician expert, and it sometimes reacts banefully on the whole household; while, on the other hand, cure at home avoids publicity and some of the dread stigma of the disease. The physician must isolate the patient in some part of the house, and guard against suicide and violence by constant supervision of trained nurses, and if the case prove too troublesome a resort at once to a private hospital is better than attempts to improvise hospital facilities in hotels and boarding-houses.

General Emergencies in Psychiatry.—There are certain very urgent conditions in mental disease constituting positive emergencies to be met by prompt treatment. Inanition is one of the most common of these conditions, and it is often not diagnosed until it has reached a degree dangerous to the life of the patient or at least to the prospect of early recovery of brain cells, which degenerate rapidly during acute malnutrition. The waste of tissues in active mental disease is excessive, and a surprising amount of concentrated nourishment is needed to sustain the patient, who may be said by the friends to have eaten pretty well and yet the breath may have a real starvation odor. The best foodstuffs and means of forced alimentation will be described under the head of dietetics. If the case borders on collapse, nutrient and stimulating enemata and the injection of saline solutions under the skin may be practised. Another almost constant emergency in acute insanity is insomnia, and it may lead to a fatal issue as surely as starvation and is not always recognized. Sleep is often feigned, or it is fitful and dreamful and partial to a degree which does not admit of that complete restoration of nervous forces which occurs only during physiological repose of cortical centres. In feeble patients one of the best aids to sleep is long expcsure in the open air, and the gentle motion of an easy carriage also favors it. In muscular subjects active exertion out of doors may be effective. Heat and cold, dry or moist, skilfully applied to the head, spine, epigastrium, or extremities, often produce sleep. Other means are warm baths with cold to the head, hot or cold packs with massage, liquid nourishment or hot drinks at bedtime with a cool bedroom and long bed-hours, and a siesta in the daytime if possible as a preparation for the night's sleep. The lower bowel should be emptied by enemata before the retiring hour, and in persons of full habit an active purge may prove the best somnifacient. The most obstinate agrypniais often due to auto-intoxication, and intestinal antisepsis should then be used after a full dose of calomel.

Obstipation in some cases is an emergency which pre-

* See *Climacteric Insanity and Melancholia*, below.
† See *Senile Insanity*, below.

* "Mental Diseases," p. 127.