Psychological medicine : a manual on mental diseases for practitioners and students.

Contributors

Craig, Maurice, Sir, 1866-1935.
Harvey Cushing/John Hay Whitney Medical Library

Publication/Creation

London : Churchill, 1905.

Persistent URL

https://wellcomecollection.org/works/mfgk3jgh

License and attribution

This material has been provided by This material has been provided by the Harvey Cushing/John Hay Whitney Medical Library at Yale University, through the Medical Heritage Library. The original may be consulted at the Harvey Cushing/John Hay Whitney Medical Library at Yale University. where the originals may be consulted.
This work has been identified as being free of known restrictions under copyright law, including all related and neighbouring rights and is being made available under the Creative Commons, Public Domain Mark.

You can copy, modify, distribute and perform the work, even for commercial purposes, without asking permission.

wellcome collection

Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
https://wellcomecollection.org

Walnut Street,
LADELPHIA.

Lt. A. R. Liefendorf
108 Huntington St.
New Haven,
Conn.

YALE
MEDICAL LIBRARY

HISTORICAL
LIBRARY

PSYCHOLOGICAL MEDICINE

A MANUAL ON MENTAL DISEASES FOR PRACTITIONERS AND STUDENTS

BY

MAURICE CRAIG

M.A., M.D. CANTAB., M.R.C.P. LOND.

PHYSICIAN FOR AND LECTURER ON MENTAL DISEASES, GUY'S HOSPITAL
CLINICAL TEACHER OF PSYCHOLOGICAL MEDICINE, ROYAL ARMY MEDICAL COLLEGE, LONDON
SENIOR ASSISTANT PHYSICIAN, BETHLEM ROYAL HOSPITAL, LONDON



LONDON
J. & A. CHURCHILL
7 GREAT MARLBOROUGH STREET
1905

PRINTED BY
SPOTTISWOODE AND CO. LTD., NEW-STREET SQUARE
LONDON

RC 341
905C

PREFACE

The object of this book is to lay before the student a short account of the principles and practice of Psychological Medicine. Several years of teaching have fully convinced me that for his future usefulness the student must be thoroughly taught the underlying principles of disease, whether that disease falls within the province of Medicine or Surgery. It is not sufficient to know that certain symptoms will be found to exist in certain maladies; the cause of their presence and their relative importance are subjects requiring intelligent study.

The keen and thoughtful observer will succeed in healing disease when a superficial physician fails, although the latter may have a thorough knowledge of his book-work. Once the fundamental principles of insanity have been learnt, the disorders of mind will at least be intelligible, and no longer a mere concatenation of strange symptoms.

Throughout the following pages the student will be constantly reminded to look upon mental disorders in the same way that he views disease in general. This warning is very necessary, as so many men regard the insane as if they were the victims of some strange visitation, and not sufferers from ordinary illness.

Antiquated terms, such as 'mad' and 'lunatic,' are strongly condemned, and are never used in this book, except when quoting Acts of Parliament or legal authorities. The retention of these words is harmful in many ways, and retards progress. It is therefore incumbent on the physician not only to

discontinue using them himself, but to discountenance the employment of them by others.

I have not cited cases illustrative of the various disorders: to have done so would have made the book more cumbrous, with no commensurate advantage. The description of isolated cases may be very misleading, disorders being largely coloured by the individual characteristics of the patient.

I have also decided not to reproduce photographs of patients suffering from the various diseases. In the majority of instances it is impossible to give a typical photograph of a sufferer from any disease until that disease is confirmed. The earliest symptoms of mental disorders rarely, if ever, show themselves by changes in the facial expression or attitude of a patient. Photographs, therefore, do not assist the diagnosis of mental disorders in their earliest forms, the point upon which I desire to lay especial stress. It is during the initial stages that disease lends itself most readily to treatment. Unfortunately, the early symptoms of mental disorder are commonly overlooked, as frequently neither the physician nor the laity attach sufficient importance to slight changes of character or symptoms of nervous fatigue. The question of treating minor symptoms, such as restlessness and irritability, is a point to which the reader should give attention.

As regards the general scheme of the book, an attempt has been made to meet the requirements both of the general practitioner and of the student.

The opening chapter is devoted to a short description of normal psychology, as it is difficult for a physician to investigate or accurately gauge symptoms of the diseased mind if he is totally ignorant of normal mental processes.

No new classification of insanity is offered, but I have endeavoured to hold an even balance between the old and the new school of Psychiatry. If we cannot accept the whole of Kraepelin's classification of mental disease, we can by no

means ignore it, forming as it does the most important contribution of recent years to the literature of insanity. I do not disguise from myself the many imperfections of my attempt at readjustment, but crave the clemency of the critics on the ground that the remodelling of old ideas is ever difficult.

A chapter has been devoted to the subject of law in its relationship to insanity, and matters such as testamentary capacity and criminal responsibility have been especially dealt with.

As sleeplessness is both a frequent cause of, and an important symptom in, most forms of mental disorder, a chapter has been reserved for its consideration.

The subject-matter throughout the book has been broken up into sections for the benefit of those who wish to refer to special matters only.

This book is designedly simple in both arrangement and language, and is, to a great extent, a summary of many years' asylum experience digested for the student. If it in any way helps the student to a better understanding of insanity, or assists the general practitioner in the early diagnosis and treatment of mental disorder, it will have fulfilled its purpose.

I owe my gratitude to many friends, who have given me invaluable assistance. To Dr. F. W. Mott, Director of the Laboratory and Pathologist to the London County Asylums, I am deeply indebted for supplying me with most of the illustrations found in this book; and also for his many kind suggestions and ever ready help. I accord my thanks to the members of the Asylums Committee of the London County Council for their kindness in allowing me to reproduce several illustrations from the 'Archives of Neurology.' I am also under no small obligation to my friend and former colleague, Dr. E. Goodall, Medical Superintendent of the Joint Counties Asylum, Carmarthen, not only for the loan of several photo-

micrographs, but also for his kindly assistance in the reading of a large portion of the manuscript, and for many useful suggestions and corrections. To my brother, Norman Craig, barrister-at-law, I am indebted more than I can well express for devoting much time and thought to the revision and correction of the whole manuscript. I also owe my grateful thanks to my colleague, Dr. Stoddart, for several kind suggestions, and to Dr. J. S. Bolton and Dr. G. Watson for the very kind loan of microscopic preparations and photomicrographs.

M. C.

Bethlem Royal Hospital, London:
March 1905.

CONTENTS

CHAP.		PAGE
	PREFACE	iii
I.	NORMAL PSYCHOLOGY	1
II.	WHAT IS INSANITY?	19
III.	CAUSATION OF INSANITY	26
IV.	CLASSIFICATION OF INSANITY	38
V.	GENERAL SYMPTOMATOLOGY	49
VI.	STATES OF EXCITEMENT	90
VII.	STATES OF DEPRESSION	106
VIII.	STUPOR	123
	CATATONIA	128
IX.	CHRONIC DELUSIONAL INSANITY (PARANOIA)	131
X.	DEMENTIA PRÆCOX	146
XI.	SECONDARY DEMENTIA	156
	ORGANIC DEMENTIA	160
XII.	EPOCHAL INSANITIES—	
	PUERPERAL INSANITIES	163
	CLIMACTERIC INSANITY	170
	SENILE INSANITY	175
XIII.	INTOXICATION PSYCHOSES—	
	ALCOHOLISM	184
	MORPHINISM	202
	COCAINISM	206
	PLUMBISM	207
XIV.	GENERAL PARALYSIS OF THE INSANE (DEMENTIA PARALYTICA)	209
XV.	EXHAUSTION PSYCHOSES—	
	NEURASTHENIA	243
	ACUTE HALLUCINATORY INSANITY	248
XVI.	GENERAL NEUROSES—	
	EPILEPSY AND INSANITY	252
	HYSTERIA AND INSANITY	264
	TRAUMATIC NEUROSES	273

CHAP.		PAGE
XVII.	Obsessional Insanity	279
XVIII.	Insanity and Physical Diseases—	
	Phthisis and Insanity	286
	Diabetes and Insanity	289
	Influenza and Insanity	289
	Chorea and Insanity	292
	Insanity of Myxœdema	295
	Cretinism	298
	Gout and Insanity	301
	Rheumatic Fever and Insanity	302
	Heart Disease and Insanity	303
	Sunstroke and Insanity	303
	Malaria and Insanity	304
	Syphilis and Insanity	304
XIX.	Defective Mental Development—	
	Idiocy and Imbecility	313
	Moral Insanity	337
XX.	Feigned Insanity	343
XXI.	The Relationship of Insanity with Law	350
XXII.	Sleeplessness	371
XXIII.	Case-taking	384
XXIV.	Treatment	405
INDEX		445

Plates I. and II.	*between pages*	158 and 159
„ III.–XXII.	„	240 and 241

PSYCHOLOGICAL MEDICINE

CHAPTER I

NORMAL PSYCHOLOGY

Although it may be outside the province of a treatise on Mental Diseases to discuss Psychology and Psychological problems, nevertheless it must be helpful, if not absolutely necessary, for the student to know something of the workings of the normal mind in seeking to understand the mind which is disordered. For this reason a few preliminary pages may be usefully devoted to a brief review of normal mental processes. Mind is composed of processes which are constantly changing, therefore the 'ego' of one moment is not the 'ego' of the next. It is this constant and rapid changing that makes the study of mind so difficult. Further, a mental process is purely subjective, whereas processes dealt with by other sciences are largely objective and can form part of the experience of others. Psychical and physical processes are intimately connected, and our study of mind is largely assisted by observing its influences on the body. For centuries philosophers and scientists have from time to time promulgated various theories as to the relation of mind and body. There are the idealists, who make body dependent upon mind; and the materialists, who postulate that mind is dependent upon matter. But the psychologist of to-day prefers not to dogmatise in either direction, and the theory of psychophysical parallelism is that which is largely held. This theory neither makes mind dependent upon matter, nor the body dependent upon mind, but states that throughout life

there is a chain of psychical events which runs parallel to another chain of physical events, and that these chains are in some way connected; but the theory does not commit itself as to how this connection occurs. The close relationship between mind and body is evident to all observant physicians. There is a mental aspect to all physical disease, but this mental aspect is too frequently overlooked, with consequent failure to recognise a symptom the treatment of which would tend greatly to the relief of a patient. The mental depression with gout, and the hopefulness of a patient with phthisis, are symptoms which are apparent to the most careless of observers. On the other hand, how frequently we see such a symptom as the irritability of fatigue, so often an indication of the approach of more serious trouble, either misconstrued or overlooked.

In the same way, if due attention were given to such physical changes as loss of weight and irregularities of the action of the bowels, in unstable individuals, much mental disorder might be averted. For the moment it is enough to impress upon the reader that the mental aspect of the organism cannot be separated from the physical, and that if the symptoms of the one appear to be more urgent than the other, the lesser must not be overlooked.

Sensation.—'Sensation' is the term used to express the most elementary of all conscious processes, and is the result of the stimulation of some bodily organ. Sensations are of two kinds, viz.: (1) Special sense sensations; (2) organic sensations. The former are due to stimulation of one of the special sense organs, and the latter are sensations which are derived from the Muscles, Tendons, Articular Surfaces, Alimentary Canal (hunger, thirst, nausea, &c.), and the Circulatory, Respiratory, and Sexual Organs.

The organic sensations differ from the special sense sensations by being more diffusible and more closely connected with the feelings. They are not so well defined, and tend more quickly to die out of memory. The attributes of sensation are: (1) Quality, (2) Intensity, (3) Duration, and (4) Extent. Quality is the attribute by which we distinguish one sensation from another; for instance, a colour is always the same colour no matter how intense or for what length

of time it lasts. Further, every sensation differs in intensity, and, according to Weber's Law, 'if sensations are to increase in intensity by equal amounts, their stimuli must increase by relatively equal amounts.' That is to say, the intensity of a stimulus must increase by a certain definite amount before any appreciable difference in the sensation can be detected. The other attributes of sensation apply to time and extent, the latter being present only in the cases of sight and touch.

Affection.—Affection has been defined by Titchener in his 'Primer of Psychology' as an 'elementary conscious process which may be set up by the stimulation of any bodily organ.' There are only two affections, (*a*) Pleasantness, (*b*) Unpleasantness. To again quote the same author: 'Now, when we have in consciousness a complex process composed of sensations and pleasantness or unpleasantness, and when the affective side strikes us more forcibly than the sense side, we call the total process *feeling*.'

Affection differs from sensation in several ways. The more we attend to a sensation the clearer it becomes, whereas if we direct our attention to an affection it fades at once. Habituation weakens affection, but not sensations, for we find that after weak sensations have lasted for some time they may even become painful. Affections which have been almost unbearable, in course of time, if they continue, may be scarcely noticed; this is especially noticeable in disorders such as melancholia. Both with feeling and affection there are certain bodily changes which accompany them. They are not so marked as the changes found with emotion, but consist of alteration in the state of pulse, breathing, bodily volume, and muscular strength. These changes clearly show the close relationship between mental and physical processes.

Attention.—Attention is the sustained and continued concentration of the mental faculties on some particular object or idea. Mental processes do not all flow along at the same level; some we encourage, others we endeavour to inhibit. Thus attention consists partly of reinforcement and partly of inhibition. The perceptions which we encourage become clearer, last longer, and are more useful. Among the bodily aspects of attention we find that the muscles, especially of

the neck and eyeballs, are fixed, expiration is prolonged, or the breath may be held altogether. The head is often turned to one side and fixed. Probably the tension of the tendons and muscles in action largely accounts for the sensation of effort which is occasioned by active attention. Attention is constantly fluctuating, and cannot be fixed for more than a short time together. The range of attention varies, and although probably one cannot concentrate the mind on more than one complex idea at a time, one can, as has been shown by experiment, attend to several simple stimuli at the same moment.

In addition to active attention there is a state of passive attention. Certain things have to be attended to, whether one wishes it or not, for instance, loud sounds or bright lights. One is largely indebted to passive attention for warning of any sudden danger. Attention is an attribute of fairly late development. Some children never acquire it, and at all times it is easily lost; attention fails with fatigue, and is affected in all forms of mental disorder. Attention is the basis of action, for in the primitive organism without attention there would be total inaction.

The disorders of attention are of two kinds:

(1) Hyperattention; (2) Inattention.

The normal mind ought to be polyideational, and should be capable of concentration on any subject which demands its attention; but when there is a reduction from general intellectual activity to concentration upon one idea, we get Hyperattention. Fixed ideas are found in several conditions; they may be due to a purely intellectual change, or may be accompanied by emotion. The most common variety of fixed idea is seen in oft-recurring imperative ideas, usually spoken of as obsessions. Inattention is either due to absence of power of reinforcing an idea, or the impossibility to inhibit accidental external influences which have no relation to the needs of the moment. Inattention may be due to failure of evolution, the power of concentration of mental faculties on a subject never having been acquired, or it may be due to dissolution. Failure of attention is seen in fatigue, in mental states after serious physical illness, in intoxication, and in many forms of mental disorder. Dream consciousness is an example of an extreme degree of inattention; and to this is

largely due the fantastic arrangement of ideas in dreams, in that there is no governing idea upon which attention is centred, but every idea has an equal chance.

Inattention will be found to be one of the chief causes of inaction in the insane.

Inattention also plays an important part in the question of memory; perceptions and ideas to which attention has been given are remembered, while an inattentive individual will often seem to have a bad memory.

Conation.—Closely connected with Attention is found a condition known as Conation, or Feeling of Effort. All consciousness is more or less conative, but some states of consciousness are far more conative than others. In prolonged active attention there is a strong feeling of effort. Some authorities believe conation to be central in origin, and directly due to brain activity; others hold that it is purely the result of tension and strain in the muscles and joints, and is thus produced by peripheral changes.

Perceptions and Ideas.—By origin perceptions and ideas are alike, but, for the sake of clearness, a distinction between them may be drawn. Perception may be spoken of when sensation is actually aroused by the presence of some external stimulus; ideas, when the mental image of a former sensation is intended. For instance, I see a book in front of me: that is a perception; while if I close my eyes I have a mental record of the former sensation derived from seeing the book: that is an idea. Apperception is a term used by Wundt to express a perception that is seen clearly in consciousness. When I look at the clock on the mantelpiece, and direct my attention to it, I see it clearly, but at the same time I am aware that there are other things round about which I perceive less clearly; in other words, I apperceive the clock and perceive the other objects.

Perceptions and Ideas are divided into three classes, viz. (1) Qualitative, (2) Extensive, and (3) Temporal. What has been said of sensations can be said of perceptions, so far as quality is concerned. Further, one is aware of locality and position; one recognises a definite arrangement of things in space. This knowledge in early life is largely acquired from tactual sensation; a child will stretch out its hand to

reach things far beyond its grasp. As evolution goes on, the visual sense develops, and in adult life it is on this sense that chief reliance is placed for information as to size, position, and distance. Binocular vision is far more accurate in measuring the third dimension than monocular vision. There is no inborn sense of the position of things in space; it is derived from education, and by such data as the size of the object, its outline and distinctness, the uniformity of colouring, by the accommodation and movement of eyes, and by comparison with surrounding objects.

Rhythm.—Temporal perceptions and ideas include rhythm. Now rhythm is found to accompany both mental and physical processes. Sleeping and waking occur, or ought to occur, at regular intervals. Walking is rhythmical. Marked periodicity is present in the reproductive functions, especially in those of the female. Allusion has already been made to the fact that attention waxes and wanes: it does so in a rhythmical manner. The æsthetic sentiment is found to favour rhythm, as is shown by melody and dancing. Rhythm also plays a prominent part in many forms of mental disorder. The insanity known as *folie circulaire* is markedly rhythmical. Dipsomania and other impulsive forms of mental disease may be periodical in onset. There are several disturbances of the process of perception, such as Illusions and Hallucinations, but it will be more convenient to describe them in a subsequent chapter.

Association of Ideas.—Let consideration next be given to Association of Ideas, that is to say, the tendency of every idea to bring into the mind its associated ideas. This may occur by simultaneous association; a presented idea may bring up without any appreciable delay another idea. Or the association may be successive, as instanced by reverie or train of thoughts.

Habit.—Habit is an example of the law of association. There are habits which are ingrained in the nervous system, and which are natural tendencies: these are phylogenetic in origin. Other habits may be acquired: these are due to education. Habitual associates are as a rule remembered, while accidental associates are frequently forgotten; thus habit plays no small part in memory. The importance of

habits cannot be over-estimated, and in treating mental disorders their significance is constantly compelling attention. Take sleep itself: it is largely a habit, and if confidence be lost and the association between bed and sleep be broken, this may become a serious obstacle to the successful treatment of insomnia. Similarly, delusions of persecution may be confirmed by the habit of treating those around us with suspicion. Never forget to encourage the development of good habits and the eradication of bad.

Emotions.—Emotions are more complex than feelings. In the former the organic sensations take a prominent place, so prominent, indeed, that some authorities go so far as to say that organic sensation is the basis of emotion. In emotion the same bodily changes occur as in the case of feeling; but in addition there are changes in the secretory organs and in the involuntary muscles. The surface of the body may be bathed in perspiration, the mouth may be dry, and the eyes wet with tears. Extreme emotion is spoken of as Passion, and when an emotion has lasted for some time it usually calms down into a mood, which denotes a weaker emotive state. The feelings and the emotions are a useful barometer by which the mental state and even the physical condition of individuals may be judged. Disturbance of the emotions is frequently an early symptom in all forms of disease, whether bodily or mental, and in some insanities the symptoms may be chiefly confined to emotional alterations, or it may be that the affective changes are the concomitants of a more complex insanity.

Sentiment.—A sentiment differs from an emotion in that with the former there is a state of active attention. It is by this means that we judge and say, 'This is right or wrong,' 'This is true or false.' Belief and disbelief are common forms of sentiments, and it must not be forgotten that a disbelief is just as positive a state as belief. Doubt is the state of uncertainty which lies between two beliefs. In such a condition as that of *folie de doute*, which will be considered later, it will be found that the active weighing of motives, and the fear of doing wrong, are the determining factors in the inaction of a fair proportion of the insane. The æsthetic sentiment is one that has no small interest to those who have

the treatment of the insane, for it undergoes alteration in most forms of mental disorder. The acute maniac is often decorated to an extravagant extent, and as a rule sees beauty in objects which in sanity he would condemn as vulgar or commonplace. Conversely, the melancholiac will deplore that things which he formerly thought beautiful now appear gloomy and ugly. Untidiness and want of personal cleanliness are characteristics of many of the insane.

Memory.—Memory is so large a subject that it is difficult to condense it into narrow limits; but it must be here described in as few words as are compatible with clearness. Külpe defines what is understood by memory in the following words: 'That an impression which has been produced in the past by a particular stimulus does not disappear outright with the cessation of that stimulus, but is somewhat conserved, and, under certain conditions, has the power of again becoming a noticeable part of conscious contents, without any renewal of the original peripheral stimulation.' In other words, memory means the tendency of the nervous elements to fall into a similar state of commotion to that in which they were when the original stimulus acted upon them. There are many types of memory, varying in different individuals. Memories may be mainly visual, auditory, tactual, or a mixed variety; other memories consist largely of word-ideas. Mental constitutions vary, and to this are due the very diverse ways in which different persons remember things. Two persons may see the same incident, and yet afterwards may describe it in such a manner that it is difficult to conceive that they are relating the same story. This is accounted for when it is remembered that the one may record what he saw, and what especially fell in with his tendencies, while the other, with tendencies widely different, reproduces the incicent from what he heard or from some other standpoint. Thus memory, although not exact, is a partial reproduction, the accuracy of which largely depends on the mental constitution of the individual, and the degree of his attention when the impression was received. Events that created a strong impression, social habits of everyday recurrence, and recent events, are all easily remembered. The power of being able to forget useless things is of great importance in reliev-

ing the memory. The marks of a good memory are: (1) The rapidity with which the power of recalling is acquired; (2) the length of time during which the power of recalling lasts without being refreshed; (3) the rapidity and accuracy of actual revival; and (4) the power of forgetting those things which are of no value or have ceased to be of value.

To cultivate a good memory it is necessary to have (1) a keen observation; (2) a power of concentrating attention; (3) a method of arranging in a systematic way things to be remembered; (4) a power of forming association. For practical clinical purposes memory may be divided into two classes —recent, and distant or organised memory. The former is the first to go in amnesic states, as it has a lesser hold on the nervous system. Disorders of memory fall into three main classes: (A) Amnesic states, or loss of memory; (B) Hypermnesic states, where there is exaltation of memory; and (C) Paramnesic states, or illusions of memory.

(A) *Failure of memory* follows the ordinary law of dissolution of the nervous system; that is, that the latest acquired and consequently the least organised attributes disappear first, the failure being in order inverse to the order of acquisition. The patient is no longer able to store fresh impressions, and the events of long ago reappear with the vividness of an event of yesterday. How often is it said, 'Oh, his memory is excellent; he remembers events which happened years and years ago, which I have long forgotten'! But such a memory is of little use in comparison with the memory which is retentive of events of recent occurrence, and is indeed consistent with and sometimes symptomatic of impending failure. Ribot in his 'Diseases of Memory' gives the following classification of Amnesic States:

(1) *Congenital* defects.

(2) Conditions of *temporary* loss:

- (*a*) In epilepsy.
- (*b*) Following injury or shock.
- (*c*) In acute mental disorders.

(3) Conditions of *periodic* loss:

- (*a*) In states of double consciousness.
- (*b*) In somnambulistic states.

(4) Conditions of *progressive* loss:
  (*a*) In general paralysis of the insane.
  (*b*) Associated with various brain lesions.
  (*c*) In senile dementia.

(5) Conditions of *partial* loss
  (as seen in loss of memory for names, aphasia of all kinds, music, &c.).

Defects of memory may be due to failure of evolution or to a temporary or progressive dissolution. A true amnesia is always a factor of great importance in considering the prognosis of a case of mental disorder. As a general working rule, when the memory is found to be bad or progressively failing, the outlook for recovery is not good.

There are several notable exceptions to this rule, more especially in certain acute alcoholic cases.

(B) *Hypermnesic states.*—These may be:
  (1) Congenital.
  (2) Temporary.
  (3) Periodic.
  (4) Partial.

This condition of exaltation of memory is seen not unfrequently in acute fevers, and notably with poisoning by drugs, such as hashish. It is a symptom which is not uncommonly present in some cases of acute excitement.

(C) *Paramnesia.*—This condition of illusion of memory is of intense interest. In it an incident which never occurred seems to be familiar, in fact so familiar as to have been a part of experience. A common instance of paramnesia is that a person tells the story of some event a number of times, and each time tells it as if it happened to himself, until finally he becomes firmly convinced that he was really present when the incident took place. The mental process probably is that when a man retells his story he recalls, not so much the original event as the description he gave of it on a former occasion. Paramnesia is a common symptom in certain alcoholic forms of mental disorder.

Imagination.—Imagination is closely allied to memory, and yet differs from it in several important particulars. A memory is more or less a recall or reproduction of a former

perception or group of perceptions, whereas imagination is usually derived from a number of former perceptions. Moreover, memory has with it a consciousness that the revival is more or less familiar and has been experienced before. This is not the case with imagination, for with it there is no such feeling of familiarity. Imagination is entirely dependent upon memory for its existence; for, if the power to recall past experiences be lost, the data necessary for imagination are absent.

Movement and Action.—Movements may be of two kinds: (1) Voluntary and (2) Involuntary. With voluntary movements we have conscious antecedents and conscious concomitants; whereas with involuntary movements these are both absent. The involuntary movements are confined to movements in the bodily organs, such as the heart and lungs. The simplest forms of voluntary action take place during passive attention. Now, impulsive actions are of this kind. Volitional and selective actions take place only during active attention. In the latter cases there is an active weighing of motives, and the period between the thought of action and the movement is termed deliberation. Acts which were originally consciously performed may, through repetition, become automatic. Ziehen divides automatic acts into two groups: (1) Those which have developed from reflex acts in the course of long ages and many generations (phylogenetic); (2) those which are the product of voluntary acts during the lifetime of a single individual (ontogenetic). Automatic acts which fall into the second group are acts which may in states of dissolution again become conscious acts, and may require the presence of active attention for their proper performance. Tuke defines mental automatism as 'a state in which a series of actions are performed without cerebral action or conscious will, as during reverie or in certain morbid conditions.'

Microkinesis. — Certain spontaneous and uncontrollable movements (microkinesis) are seen in the infant. Warner infers that in the infant brain the centres act more or less separately and independently, and that it is only as evolution advances and the centres act in conjunction that the movements become controlled. These fidgety or microkinetic movements are of marked interest, for in states of dissolution

they reappear. The uncontrolled actions of delirium and mania and other fidgety movements are a reversion to the microkinetic movements of early life. Defendorf in his text-book on 'Clinical Psychiatry,' which is an adaptation of Kraepelin's work, classifies *morbid disturbances of volition* in the following way:

'(1) The energy of the volitional impulse can be diminished or increased; (2) its release facilitated or impeded; (3) or the direction can be modified by external or internal influences; (4) morbid impulses can forcibly suppress the normal will; (5) or natural impulses can assume morbid forms; (6) finally, the conduct of the insane is naturally influenced by all those disturbances which occur in other spheres of their mental life, although the volitional process itself presents no disturbance.'

In the first place, volitional impulses are diminished with fatigue, intoxication, and with certain drugs, such as morphia, and in several forms of mental disorders. There is increase of volitional impulse in conditions of motor excitement. The so-called latent period, or period of inaction before making the movement, may be lengthened, and, according to some authorities, this lengthening is due to a certain amount of resistance which has to be overcome. This is well seen in melancholia. Attention has much to do with action; inattention may play an important part in disorders of the will. For this reason certain children are always inactive. Obsessions (compulsive acts or imperative ideas) are another variety of disorder of the will; these will be fully dealt with in a subsequent chapter.

Impulsive Acts.—Impulsive acts are numerous; the following are the types given by Clouston: '(1) General impulsiveness, or the tendency to react immediately to all sorts of external or internal stimuli. (2) Epileptiform impulses which are unconscious in character, or in which, at any rate, the patient is unable to recall the reason for or the nature of the impulsive act. (3) Sexual impulses of all kinds. (4) Morbid appetites, in which the patients are unable to resist eating and drinking all sorts of filth. (5) Homicidal impulses. (6) Suicidal impulses. (7) Dipsomania, kleptomania, pyromania, &c. (8) Impulsive conditions which alternate with

forms of intellectual and moral insanity.' Ribot, in his 'Diseases of the Will,' divides the disorders of the will into two principal groups, according as the will is impaired or abolished. 'Impairment of the will may be due to (1) lack of impulse, or (2) excess of impulse.' The former variety is called aboulia, meaning that the patient knows what he ought to do, but lacks the power to bring his will into action. This condition is common in some forms of melancholia. In the second class the difficulty is lack of inhibition and control.

Judgment and Reasoning.—Titchener, in his 'Outlines of Psychology,' defines judgment as 'the most elementary form of intellect,' and reasoning as 'the name given to a successive association of judgments. . . . In every association two ideas are brought into connection. When the connection itself has become the object of attention, when, i.e., we have formed an idea of connection, as distinct from the ideas which are connected, we speak of it as *Relation*. Reasoning implies an idea of relation; an idea which guides us in our argument, as the idea of movement guides us in the performance of an action.' Hyslop, in his book on 'Mental Physiology,' writes that the degree of perfection of judgment depends on—

(1) Its *clearness*, and this is interfered with by—

(*a*) Imperfect observation.
(*b*) Defective conditions of memory.
(*c*) Imperfect use and conception of words.
(*d*) The presence of emotional disturbances.
(*e*) Traditions—attending to the notions of others.

(2) Its *accuracy*, interfered with by—

(*a*) Imperfect understanding of propositions.
(*b*) Imperfect observation.
(*c*) Imperfect recall.
(*d*) Emotional states, strong feelings.
(*e*) Instability of mental action.
(*f*) Rapidity of formation of judgments.

Judgment and reasoning, being so complex, must very easily be affected by emotions, attention, memory, and even perception. It is not, therefore, surprising that errors and disturbances of reasoning should be common symptoms in

all forms of mental disorder. Delusions fall under this heading: these are fully dealt with in the next chapter.

Belief.—Hume says that belief is nothing more than having a clear idea; when we have a clear idea we are believing. Belief is a subjective variety of sentiment. Disbelief is as much a belief as belief, doubt being the intermediate state. Both belief and doubt are important and common symptoms in mental disorder. Doubt and the active weighing of motives are one of the chief causes of inaction in certain forms of insanity. Apart from definite mental disease there is a large class of persons whose usefulness in life is constantly being hampered by doubts whether they ought to do this thing or that, and who, even when they have formed a decision, are disturbed in mind, considering that perhaps they ought to have acted otherwise.

Self-Consciousness.—By 'self' we mean the 'ego' composed of a complex of sensations, perceptions, and affections. In early life the idea of self is largely developed from kinæsthetic sensations. By kinæsthesis are meant the sense of movement, and the sense by which we appreciate direction and extent of movement. Kinæsthetic sensation is derived from voluntary muscles in action, joints, tendons, and skin. As time goes on, the visual centres assist in the production of an idea of self, and also a certain amount is learned about oneself from the remarks that others make. All through life sensation is the important factor in our idea of self, for greatly diminish sensation and you have to a large extent, if not completely, taken away the consciousness of self. There is no doubt that this fact is not as fully realised as it ought to be, and yet it is the basis of many delusions in the insane. Patients who have the belief that they are dead will usually be found to have an almost complete anæsthesia of the body. One patient, whose sensation is markedly affected, believes that he can fly, while another will state that he 'weighs tons.' Self-consciousness is defined by Titchener as 'a consciousness in which the concept or idea of self, or some phase or part of it, is present in the state of attention, and thus serves as a centre of association for other ideas.' A person who is self-conscious is an individual who is eminently introspective.

Subject-Consciousness and Object-Consciousness. — Subject-

Consciousness and Object-Consciousness are terms frequently used in text-books on mental disorder. They are words which were introduced by Bevan Lewis, and are very useful in expressing 'self' and its relationship to its surroundings. Subject-consciousness is what I know, what I feel; while object-consciousness is the knowledge of things of the external world. The 'ego' is therefore conjoined subject- and object-consciousness. Bevan Lewis, in his excellent work on Mental Disease, lays much stress on the rise of subject-consciousness and fall of object-consciousness in mania and melancholia, and explains many of the mental symptoms from this standpoint. No doubt he is perfectly correct in his deductions, but it is probably true that in all disease, physical as well as mental, there is a rise of subject-consciousness and a corresponding fall in object-consciousness. Even the patient with a severe toothache takes little interest in his environment, but his subject-consciousness is decidedly raised. Further reference will be made to this subject when dealing with 'General Symptomatology,' for it certainly explains and largely accounts for several important symptoms usually present in such disorders as melancholia.

Reaction Times.—Until comparatively recent times psychologists relied chiefly upon introspection for the study of mental processes. The tendency of later years has been more in the direction of experimental methods. The exponents of purely introspective psychology object to experimental study on the ground that, by placing an individual under standard conditions, the ordinary mental state of that individual is altered. This is probably true, and must be always borne in mind when doing experimental work. On the other hand, in the older psychology, far too much was left to the personal equation of the observer, and this, no doubt, is the reason why the older psychologists differ so much in their results. No control could be kept on their observations, and each recorded what he considered to be the workings of his own mind. Experiment cannot take the place of introspection, but it can usefully supplement it. By experiment we mean the placing of an individual under standard conditions. The same experiments can be repeated, and control experiments made. The most common form of

experiment is reaction-time observations. These reaction-time experiments may be either (1) simple or (2) compound. The methods of procedure are these: The individual who is being tested, for the purpose of convenience here called the reactor, is told to make a certain pre-arranged movement, on receiving a certain sensory stimulus, given and controlled by the experimenter. The time elapsing between the application of the sensory stimulus and the execution of the movement is accurately measured.

A simple reaction-time experiment may be of two kinds, (*a*) sensory and (*b*) motor. In the case of the former, the reactor directs his attention to the sensory stimulus, whether it be a light or sound of a bell, which he will receive, and not towards the movement he has to make, commonly the pressure on the bottom of an electric apparatus.

In the motor reaction, the reactor attends to and thinks of the movement he has to make when he receives the stimulus. Thus it will be seen that the motor reaction more nearly resembles a reflex action, and is therefore a more rapid reaction than the sensory one. With these reactions as a base, it is possible to add to their complexity in a number of ways, and such complex reactions are known as compound reactions. They can be made very complicated, in which case the duration of the reaction will be correspondingly longer. The reactor may have several known or unknown stimuli to which he is to react, and be told only to react when he has fully cognised the stimulus. For instance, in a *choice* reaction, he may have choice of signal and choice of reaction, as when letters are spoken to him or exhibited on a photographic shutter, and he is told to react with his right hand for all vowels and with his left for consonants. Munsterberg has done much work on association reactions. His method was to call out a word aloud to the subject, who then had to give his first clear idea associated with the word. He found that persons could be fairly classified into three types: (1) those who associated *beneath*—e.g. 'hand' called out and 'finger' given by the subject; (2) those who answered by *giving a whole* of which the word was part—e.g. 'hand' called out and 'arm' given by the subject; and (3) those who gave an analogue—e.g. 'hand' called out and 'foot'

given by subject. These Munsterberg considered corresponded to types of intellect; Class No. 1 tending to deal with detail, Class No. 2 tending to generalise, and Class No. 3 tending to be witty. Experimental psychology may prove to be of great use in the training of children ; it may be possible in this way to discover what faculties are most acute in each child. So also in mental disease diagnosis ; reaction times are longer in the insane, and they give more premature reaction, i.e. they react too soon, before the sign or stimulus has been given. Premature reactions are also common in fatigue states. In experimental work among the insane it is of interest to observe the influence of distraction, the power of estimating time, &c. Memory, too, may be tested by such methods as those employed by Ebbinghouse.

Dream States.—Dream states must ever be of intense interest to the physician whose work is devoted to the study of mental disorder. Some forms of insanity seem to be closely allied to a condition of dream-consciousness, and the dreams of the sane often show a marked resemblance to the hallucinations of the insane. We probably dream, if the word can be used in this sense, in all stages of sleep ; but it is only during light sleep that we can remember the fact that we have been dreaming. Dreams may be set up by any stimuli ; some authorities consider that visual dreams are not uncommonly started by changes in the circulation of the retina.

Aristotle pointed out, that as in sleep the senses are no longer occupied with external objects, internal operations are therefore more easily perceived. During dreams inattention is extreme : every stimulus has an equal chance, free from the influence of reinforcement or the control of inhibition. Probably this extreme inattention largely accounts for the grotesque arrangements of ideas during sleep. To a certain extent the laws of habit and association regulate ideas in dreams, but the association is constantly being interrupted by a fresh stimulus, starting fresh ideas. The sensory centres are active during sleep, so that things are commonly seen and heard. Ideas may be very clear and vivid in dreams, a fact which has been advanced as an argument in explanation of the ready manner in which they are accepted as realities. Periods

of time are greatly abridged, and in the space of a few moments a dreamer will pass through what seem to be the events of hours. The dreamer usually is indifferent to the presence of others in the drama of his dream, and he will do all kinds of ridiculous things without a thought of the criticism of those who are witnesses of his folly. If reasoning and judgment are weak, as in dreams they clearly are, conscience may be as active as in the daytime.

Turning from the study of dreams to insanity, the points of similarity are apparent. A brief recapitulation of the chief characteristics of the state of the dreamer, and a comparison of these with the state of insanity, will demonstrate the justice of this observation. Attention fails in both, and in some forms of mental disorder ideas are fantastic in arrangement, as in the case of dreams, the laws of association and habit only having partial control. The ideas in the insane seem to be equally vivid and impressive with those of the dreamer and to carry with them the force of conviction. Time is not uncommonly abridged in insanity as in dreams, and days seem to be years. The maniac and many other insane persons are, like the dreamer, entirely indifferent to the presence of others, subject-consciousness being in the ascendant and object-consciousness correspondingly lessened. The powers of reasoning and judgment are in abeyance, whereas conscience may be stronger than ever. Aristotle might have explained certain mental states as he explained dream-consciousness, for there can be no doubt that many of the insane have their attention constantly directed to the workings of their internal organs, but at the same time their special senses are found to be less occupied with their surroundings and the affairs of others.

The psychology which has been described in this chapter is of a very rudimentary nature. The end in view has been merely to show the student some of the workings of the human mind, in order that he may more readily recognise mental disease in its earliest forms. But this is not all; some knowledge of normal psychology will make him a more successful physician, for he will no longer look upon mental disorder as a hopelessly obscure disease in which the symptoms are outside the limits of human understanding.

CHAPTER II

WHAT IS INSANITY?

Insanity, like sanity, is indefinable. Insanity connotes the absence, whether by non-acquisition or loss, of some of the elements which go to make up what we understand by sanity. Sanity is, however, not to be ascertained by any definite standard. Sanity and insanity are both relative terms. Insanity is a negation of the state of sanity, while sanity is measured by an approximation to the normal, as known in the experience of the human race. Sanity, as applied to certain persons, does not connote mental perfection, nor insanity something less than mental perfection. It is impossible to find a person with so healthy and perfect a body that some slight deformity or degeneracy cannot be observed. So, it is impossible to find a perfect mind. But it is not by perfection that sanity is measured, and insanity is not determined by relation to perfection, but by relation to sanity. It is by no means uncommon in cases involving an issue of sanity to hear counsel ask a witness to define what he means by insanity; but woe betide that witness if he tries to give an answer in the terms of the question, that is to say in the form of a definition. There is no definition possible which would not include in its limits a large number of persons accredited to be sane, and fail to include a goodly number of those whom it was intended to comprehend. Premising, therefore, that it is impossible to define insanity, it is nevertheless necessary for educational purposes to be dogmatic even at the risk of being wrong. The student must have something definite, something tangible, around which he may centre his ideas.

What help is it to tell the inquirer that mental disorder is a term so wide that no line of demarcation can encircle it,

and that it is, in fact, as indefinable as life itself? A working rule must be found, and for practical purposes the following is probably the best that can be given: A person may be considered of unsound mind if from some *mental* cause (1) he is unable to look after himself and his affairs, (2) he is dangerous to himself or others, or (3) he interferes with society. In considering mental disorder three questions must be borne in mind and separately considered. In the first place, there is the 'self,' which is composed of the sum-total of subjective sensations, perceptions, feelings, and ideas at any given moment. We depend largely upon kinæsthetic (kinæsthesis = sense of movement) sensation for our knowledge of self, for by means of it we know of our relationship to our environment. Now, kinæsthetic sensation is derived from (1) the muscles in action, (2) joints moved, (3) tendons, fasciæ, and skin. According to Bastian, the so-called motor area is the centre of kinæsthesis in the brain. Every time a movement is made we receive a group of sensorial impressions occasioned by and peculiar to that movement. Diminish sensation, and you have, to a certain extent, taken away the consciousness of self. That disordered sensation has a marked effect upon the individual ideas of self is clearly seen in several forms of mental disorder, where altered sensation is a prominent symptom. A patient in Bethlem Hospital had the belief that she was dead, and upon examining her sensations it was found that she had a general and well-marked anæsthesia.

The second factor we must consider in dealing with mental disorder is *environment*. There are different grades of society, and the customs and habits of those grades vary. Omitting for the present degeneracy, as it is found in all divisions of society, we find that the lower we go in the social scale the less we expect to see such attributes as morality and control fully developed. In the lower grades of society education is of a more rudimentary nature, and therefore less is expected of a man who belongs to this class. Likewise, in dealing with crime and insanity, the question of environment must always be considered; but this subject is dealt with in a subsequent chapter.

The third factor is, in many ways, the most important of all, and that is the adjustment of the first and second factors,

which is the 'adjustment of self to surroundings.' Mercier, in his excellent work entitled 'Sanity and Insanity,' has defined conduct as 'the adjustment of self to surroundings,' and no better definition can be conceived, as this adjustment seems to be the very essence of conduct. In insanity we have to deal with failure of adjustment of self to environment. Now this failure may show itself in many ways. The sufferer may neglect the most rudimentary and necessary requirements of life. Food may neither be sought nor eaten even when it is placed within reach. The ordinary laws of self-conservation may be neglected: he may fail to protect himself from perils which endanger his very life. The rules of personal cleanliness may be unobserved. The ability to earn a living may be absent. Acts of violence against themselves or others may be a prominent symptom in the conduct of some persons. We are born into a community, and have to adapt ourselves to a social and moral code of laws. This code of laws determines what we may do and what we may not do; it lays down rules as to personal property, and creates the distinction between *meum* and *tuum*. Some persons fail to adjust themselves to these laws, and their conduct is disordered in that they fail to distinguish between their property and that of others. Others neglect to conform to the laws of decency and propriety as dictated by society. These are a few examples of the ways in which disordered conduct may show itself. Although a judgment of a person's sanity may be formed either by noting his conversation or observing his conduct, it is largely the state of the latter that decides whether he is to retain his liberty or not. Society rules that the liberty of the subject is only possible so long as that liberty is not used to interfere with the liberty of others. From this it is clear that it is society which demands that such persons who fail to adjust themselves to their surroundings, and whose conduct is dangerous either to themselves or others, should be placed under care. Some persons are much more insane in their conversation than they are in their conduct, while in others the mental aberration is more noticeable in their conduct than in their conversation. When a man's conversation is wild and rambling, or replete with strange fancies and delusions, there is no difficulty even for the lay mind to diagnose

that he is suffering from some mental disorder. But the difficulty to the lay mind is much greater when it is the conduct that is chiefly at fault, especially when the vagaries of conduct are slight; and yet the patient with disordered conduct is usually the more dangerous person.

The insane usually keep to themselves; they feel that they are not in touch with the thoughts and feelings of others, either because they believe that they are of such a nature as renders them unfit to associate with the world, or that mankind, by hint or persecution, has clearly shown them that they are not wanted. The healthy-minded man is gregarious: the insane is solitary. This is one of the symptoms by which the physician knows when a patient with mental disorder has returned to health. During his illness he keeps to himself and is self-absorbed; but when he recovers he associates with others. There are exceptions to this rule, for some persons during their insanity devote themselves to an almost extravagant extent to helping others; but nevertheless their mental aberration is usually clearly indicated in other ways, and is even evidenced by the manner in which they render their assistance. Another characteristic of the disordered mind is the defect of judgment usually evinced. Some of the insane are ready to believe any statement, however extravagant or improbable; others only believe their own opinion to be correct, notwithstanding that it is unsupported by evidence and contrary to the ideas of everybody else. The question of delusions has been fully gone into elsewhere, and therefore it is unnecessary to detain the reader further than to emphasise the fact that insanity can exist without delusions, and delusions may occur in persons who are not insane. Some people would have us believe that false beliefs are the very essence of insanity, and, indeed, would almost hesitate to certify a man as a person of unsound mind if no delusions could be discovered. A truly dangerous doctrine, for some of the most homicidal and impulsive patients have no delusions. When present, delusions may be most valuable data, in conjunction with other evidence, in conclusively proving the true mental state of a patient. For further information on this topic the reader must

refer to the passage on delusions which will be found in the chapter on General Symptomatology.

Again, insanity is not proved by the presence of hallucinations or other sensory disorders, for they, like delusions, may exist apart from certifiable mental disorder. Clearly they indicate disturbances of nervous functions, but such disturbances may take place within the realm of sanity. Nevertheless, in any given case, hallucinations may be *one* of the factors which go to prove the insanity of the patient, and may even be the symptom which determines the line of treatment. Insanity is not evidenced by one symptom, but a group of symptoms. A man may be depressed, a man may have a delusion, a man may have an hallucination, a man may be emaciated and in bad physical health, and yet not be insane; but if he has all these he is almost certainly insane. Disorders of the normal feelings and emotions frequently connote insanity. A man may hear of the death of a near and loved relative without evincing the slightest concern. Now, if such a man has been in the past one who has not only keenly felt domestic losses, but has exhibited emotion, the present apathy and apparent callous behaviour are probably indicative of severe mental disorder. In health we react to pleasure and pain, and those about us observe the effect of those sensations upon us. But in insanity this is altered, and unusual reactions follow these stimuli. Again, the healthy mind sees good in all men; to hate is almost alien to it, and even dislike is kept within narrow bounds. But the converse is equally true: in sanity love is bestowed only on a chosen few, who, by ties of relationship or exceptional friendship, are its proper recipients. The insane are often bound by no such limitations, and are ready to thrust their affections upon any who will receive them. The girl who in health is reserved and maidenly in her attitude, frequently becomes forward and immodest when insane. The study of the moral sense, even in the apparently healthy-minded, is most complex. We see men who are possessed of exceptional intellectual powers, men who have within them the fire of genius, men who are endowed with brilliant talents, but whose moral sense is most rudimentary. Are their shortcomings to be

considered under the head of vice or disease? Such men may be capable of writing prose or verse, every line of which glows with lofty ideals or sublime thought, and then, laying aside the pen, they prepare to do some action which maybe entails doing grievous wrong to some fellow-creature.

If a number of the mental attributes of such a man were as shallow as his moral sense, he would have to be classed as insane; but when the degradation is partial, it is usually spoken of as vice. In determining a question of insanity where the moral or some other sense is involved, the present conduct must be compared with the past. Slow deterioration extending over years is more difficult to treat as insanity than some sudden change. All change of habit connotes an altered mental state, and the nature of the variation, as shown by thought and action, marks whether it is the result of higher evolution or dissolution. In this connection the words of Maudsley[1] may be usefully quoted as well summarising the position of the insane unit in relation to the social whole: 'By insanity of mind is meant such derangement of the leading functions of thought, feeling, and will, together or separately, as disables the person from thinking the thoughts, feeling the feelings, and doing the duties of the social body in, for, and by which he lives. . . . Insanity means essentially then such a want of harmony between the individual and his social medium, by reason of some defect or fault of mind in him, as prevents him from living and working among his kind in the social organisation. Completely out of tune there, he is a social discord of which nothing can be made.' Mental disorder may be due to a failure of evolution; such an organism is not endowed with those intellectual attributes with which nature usually equips a man. Reason and judgment, purpose and control, have been denied him. Small wonder that as he grows up he finds himself out of touch with his fellow-men, and unable to compete on an equality with them in the battle of life. He drifts, swayed by his lower instincts, which lack the control of higher attributes. On the other side we see the effects of dissolution; here the once intellectual man loses the attributes he originally possessed, or, if not losing the attributes, loses the proportion and corre-

[1] *Pathology of Mind*, ch. i.

spondence between them which are necessary to an even and balanced mind. Disordered sensation or strong emotion may usurp the whole attention, to the detriment of other faculties. Sensory illusions may deceive the man and bias his conduct, or profound depression may paralyse both thought and movement. But, let it be remembered, insanity is not revealed by one symptom: the change can be seen in everything, physical or mental. Decay is not limited to one organ, but affects the body as a whole. The dissolution may be uneven, and the degeneration in one part may far exceed that of another; nevertheless, the whole is affected. In determining insanity the evidence to establish it cannot be derived from one symptom. The symptoms present may be regarded much in the same way as pieces of circumstantial evidence are during a trial. Each individual piece denotes nothing, but the chain formed by welding the separate pieces together may be so strong as to compel one conclusion. So with the symptoms of insanity. Each of them present alone might be consistent with sanity, but taken together they may form so strong a body of evidence as to force the inference of insanity.

CHAPTER III

CAUSATION OF INSANITY

Much has been written and much will continue to be written upon this subject, a subject so full of interest and importance to the human race; but before entering upon it one word of warning may usefully be given. It is not always safe to accept either the apparent cause of a mental break-down or the cause to which the friends of the patient may attribute it. Causes and early symptoms of disorders are constantly being confused, and, although there may be no intention to mislead, if the physician is careless or too readily accepts data, his deduction may be entirely erroneous. Take for instance the question of alcohol; this may be given as the cause of the mental disorder, and yet inquiry may elicit that the intemperance was of recent development, being in fact the first sign that the patient was losing control. In all matters appertaining to our daily life each of us is constantly seeking for explanations of this or that phenomenon, and may determine upon a solution which is in fact entirely erroneous. A person who develops an ordinary cold in the head is not satisfied until he finds out how he got it, and having allocated it to coming out of a heated theatre, or sitting by an open window, he is perfectly satisfied with his conclusions, however mistaken they may be. In determining causation, the physician cannot be too careful in his inquiry or too guarded in his conclusions. Many classifications of causation of mental disorder have been from time to time drawn up, but all of them are more or less unsatisfactory. The system of dividing the causes up into predisposing and exciting is perhaps as confusing as any, for factors such as syphilis and alcohol may be either predisposing, or exciting, or both. The student will be wiser to take a much wider scheme to begin

with, and then, if he so wishes, subdivide afterwards. The system used by Mercier, whereby the main causes are divided under two heads, Heredity and Stress, is one which at any rate commends itself by its simplicity. By inheritance it meant that the child tends to inherit every attribute of the parent. Our nervous system, like any other system of the body, bears in all probability the stamp of our ancestors upon it. If our parents or grandparents have had an unstable nervous system, the *tendency* is that we shall be unstable in the same direction. We would especially emphasise the word *tendency*, for after all it is nothing more. Because our ancestors were of unsound mind, it is no reason why we should become insane ; all we inherit is a *tendency*, not a certainty, to be unstable, so far as our own nervous system is concerned. Now this is very important to fully realise and remember, for so many persons spend their life worrying about their future because their inheritance is not sound. After all, it is a great advantage to know the weak point in one's armour, so that that part may be guarded against undue stress. Moreover it is this knowledge of tendencies that is practically the keynote of preventive treatment, and the guide by which life should be regulated.

Degeneracy in the parent may be evidenced by insanity of all kinds, epilepsy, alcoholism, moral perversion, and the like ; and the presence of any such element of degeneracy in the parent is apt to engender in the offspring similar defects, or a state of general instability. On the other hand, the children of such a parent may be apparently healthy, but in turn their offspring may exhibit symptoms of mental disorder. In this case the elements of insanity are apparently latent in the second generation, but in the third there is a reversion to the original condition. This reversion is known as Atavism. Further, it has been noted that where we find insanity appearing in several generations, the tendency is for it to appear earlier in each successive generation ; this is probably only true in families where the taint is exceptionally strong. It must also be remembered that the danger of insanity to the offspring is greater as the begetting of the child is nearer to the insanity in the parent. On the other hand, from time to time one finds an insane family whose parents are not insane,

and in whose relatives no marked insanity can be ascertained. Before leaving this question of Inheritance, reference may be made to one other law which Mercier calls the 'Law of Sanguinity,' and which he explains in the following way: 'There is a certain degree of dissimilarity (sanguinity) between parents, which is most favourable for the production of well-organised offspring; and parents who are more similar (consanguinity) or more dissimilar (exsanguinity) will have offspring (if any) whose organisation will be inferior in proportion to the distance of the parents from the most favourable point.' In other words, this means that the more dissimilar, up to a certain point, parents are, the stronger and better the offspring, but that individuals whose constitutions and temperaments are alike will either have no children or degenerate children. Now, this law largely decides the question of the marriage of first cousins. If the parties who are contemplating marriage are of blood-relationship, and if in both families the stock is markedly degenerate, and if this degeneracy is exhibited by instability or neurotic symptoms in the individuals in question, then it is extremely probable that the offspring of such a marriage would be degenerate. Conversely, if there is no such similarity of constitution, notwithstanding the blood-relationship, the offspring would in all probability be healthy.

We will now pass on to the stresses, which may be of two kinds: (1) Direct, (2) Indirect. The *direct* stresses include factors such as Brain Tumours, Cerebral Hæmorrhage, Injuries to Cranium or Brain, and inflammation of meninges or brain itself. Among the direct stresses we must also include poisons circulating in the blood; these may be autotoxins or toxins derived from external agents. Every year brings more and more convincing evidence of the importance of recognising that autotoxins derived from the alimentary tract play no small *rôle* in the production of insanity. Blood changes, including poisons circulating in the blood, have for some time past been placed in a prominent position among the various factors to be considered when studying physical disease. The case is no different in insanity, and it may fairly be said that the advantages to be gained by a careful study of the blood in cases of mental disorder cannot be over-estimated. Con-

stipation is not only a common symptom in the insane, but it is the rule rather than the exception to find a history of prolonged constipation before the mental disorder supervened. For years the blood may have been loaded with effete material, and is it to be wondered at that the nervous system, together with other systems of the body, finally becomes disorganised as a result? Much valuable work is being done in the investigation of this subject, and it is undoubtedly a field of study which will amply repay the worker. Perhaps, after all, the causation of much mental disorder is not so intricate and complicated as has been supposed; and it may be that while we have been groping in the dark with metaphysicians, the key to the problem has been lying under our very hands. Let there be no misapprehension; the suggestion is no new one; it may well be that its revival, assisted by later scientific methods, may discover much that escaped those who have gone before. May it not be that much of the growing increase of mental disorder is to a certain extent due to our mode of living; no time for proper meals, no time for necessary exercise, no time for attending to health; the race for life is too keen, until finally we perish in the product of our own metabolism?

The subject of direct stresses need not be further pursued, as clearly, if the damage to the brain is severe enough, there will be some mental disorder as a result, no matter how stable the nervous system of the patient may originally have been. With the *indirect* stresses the matter is different, for they act much more readily on the unstable than on the individual with a sound nervous system. These are of varied kinds, and include such factors as anxiety and worry, financial and domestic difficulties, misdirected education, intemperance, syphilis, sexual excesses, &c. Certain occupations seem more favourable for the development of mental disease than others, and especially highly speculative businesses. Successful work, so long as it is not too successful, seldom leads to mental disorder; but unsuccessful work shows a very different record.

Over-work. — Over-work, again, is a cause which must be received with extreme caution. No doubt some individuals, either from necessity or from choice, spend their days in steady work, and seldom take exercise or indulge in holidays. In pre-

disposed persons, this may end in a mental break-down, but the number of such will be by no means large. Again, it is not uncommon to meet persons of humble origin, who by means of incessant work manage to raise themselves into some position higher in the social scale. They reach their ideal only to find that they must be failures, as they lack the attributes which are necessary for success. Governesses, to some extent, belong to this class. The calling of a governess is always precarious, her salary is often a mere pittance; and, as years go by, she finds herself with no savings, her accomplishments out of date, and nothing but the workhouse to look to.

There are no factors so prone to produce insanity as worry and constant anxiety. Domestic troubles perhaps fall more heavily upon women, whereas financial difficulties and pecuniary losses chiefly affect the male sex.

Education.—The question of education and its relationship to insanity is constantly being inquired into with varying results. In educating a child we must remember that the mind and body should be developed together. The close relationship of mind to body is fully recognised in theory, but in practice it is all too frequently overlooked. How common it is to see a brilliantly intellectual child being forced along to pass high examinations, while the development of the physical side is, for the time being, forgotten! When it is realised that this very brilliancy probably indicates nervous and mental instability, that it is the product of too rapid evolution, its grave import will be better understood. Brilliancy ought to be the warning note to the parent and the teacher that the mental side must be kept back until the physical is developed. One of the main reasons of mental failure in the young is too rapid evolution, in which case the child matures too quickly. The danger here is instability and a tendency to decay early. Throughout the natural world we find that those organisms which develop rapidly, and reach maturity in a comparatively short time, tend likewise to degenerate early, and that their life-history is a short one. Exactly the same process takes place in the nervous system of a human being. For stability it is requisite that the growth and development should be slow and steady; and if from any cause this development is

too rapid, it indicates a tendency to mental instability, and not uncommonly early failure. How often parents might be saved from disappointment if this fact were only grasped and understood ! It is by no means an uncommon sight to see a child, who is considered to be a mathematical genius or a marvel in some other subject, being exhibited before an assemblage of admiring friends. The outlook for development in such a case is not too hopeful, as the very relations seem to be hurrying on the child to intellectual ruin. Every endeavour should be made to retard rapid development ; the physical side should be fully attended to, as it is largely upon the bodily condition that the stability of the mental faculties will depend. Wise education, where the mind and body are developed together, but neither at the expense of the other, is undoubtedly one of the best preventives of insanity.

Religion.—Religion, according to the popular view, is one of the chief causes of insanity. This error—for never was there a greater one—has been brought about by confusing cause with effect. No doubt it is very common to find religious subjects playing an important part in many cases of insanity, but it is not the cause of the mental disorder, but rather the explanation the patient gives of altered feelings and thoughts. Take, for instance, an insane mother, who, from her very mental disorder, is no longer able to attend to and look after her children, and who, for the same reason, neglects all her household duties ; sooner or later she will begin to accuse herself of being unnatural, and allege as the reason that God has forsaken her, and that she is lost for ever. After this, if she reads her Bible at all, she notes and emphasises all the verses which condemn her, and ignores the chapters which might lead to her comfort. Religion deals with the ' unknown,' and it is to the ' unknown ' we appeal for explanation when a disorder which we fail to recognise as an illness overtakes us. It is usually the conscientious individual who looks to religion for his explanation ; others turn to hypnotism, mesmerism, electricity, and the like. Thus we see that in the vast majority of cases religion, *per se*, does not produce insanity. Nevertheless there are a few patients whose mental breakdown dates from an attendance at some emotional religious revival. In the enthusiasm of conducting a mission

it is apt to be forgotten that there are certain unstable individuals who will be attracted by the services. Emotional excitement is either encouraged or not checked, with the result that this excitement passes on to acute mania in these predisposed persons. Religion is a powerful factor in the life of most individuals, but it wants careful and judicious handling; otherwise that which ought to generate good may be the exciting cause of an illness which may terminate in dementia.

Alcohol.—Alcohol stands in the first rank as a factor in the production of insanity. It is not only marked intemperance that has to be considered, for the quantity of alcohol that any given person can take without producing intoxication varies enormously, but constant 'nipping' is far more damaging to the nervous system than bouts of drunkenness. From the social standpoint, alcohol is the curse of the British race, and is slowly but surely undermining the moral energy of the nation. In the individual alcohol acts as a direct poison, and sooner or later leads to impairment of the mental faculties, or maybe definite brain disorder. Further, in the families of alcoholic parents nervous diseases of all kinds appear; the child may be imbecile from birth, or may early develop epilepsy, and in time may help to swell the already large number of insane. Children of alcoholic parents are not uncommonly vicious in their habits and criminal in their tendencies. This subject will receive more detailed consideration in a subsequent chapter, for as an individual cause of mental disorder alcohol stands a long way in front of any other. To sum up, alcohol damages the nervous system and leads to early decay of the intellectual faculties of the individual, it produces degeneracy in the offspring, and finally extinction of the race.

Syphilis.—Syphilis may be a predisposing or exciting cause of insanity, and will be fully dealt with in a subsequent chapter.

Sexual Excess.—With regard to sexual excesses, these produce varying results in different individuals, for that which is excess in one person may not be so in another. Nevertheless, it is an important factor in the production of mental disorder. In extreme cases sexual excess may bring

about a condition very similar in clinical symptoms to that of general paralysis of the insane.

Masturbation.—Masturbation in both sexes is closely connected with insanity; in certain unstable individuals it may be the exciting cause, but, generally speaking, excessive self-abuse is more commonly a symptom of mental disorder than a cause.

Physical Disease.—Physical disease may so interfere with the nutritional economy of the organism that insanity results. The delirium of fever may pass on into a true mania; in fact, a temporary insanity or mental aberration may pass on to a more permanent mental disorder. This is seen with fever, intoxication from alcohol, with anæsthetics, and in other conditions.

Sex.— Sex plays a certain part in the causation of mental disorder, as the stresses vary in men and women. Males suffer chiefly from worry and anxiety and excesses of all kinds, whereas the stress in the case of the female is largely connected with the reproductive functions. The onset of menstruation at puberty, the monthly nisus, pregnancy, lactation, and the climacteric are all periods of severe stress, and in unstable women may be the determining factors in bringing about a mental break-down. There are more insane women in the world than insane men, but this is in some way accounted for by the female population being greater than the male; and, further, fatal disorders, such as general paralysis of the insane, are more rife among men than women.

Periods of Life.—We now pass on to consider the various periods of life, and in what way they may play a part in producing mental disorder. Throughout the early years of a child's life it ought to acquire certain attributes in a fairly definite order. In the first place, the micro-kinetic or spontaneous uncontrolled movements of infancy slowly disappear, the child's movements are regulated and controlled, and are adapted to its wants and the requirements of its environment. As months and years pass along we see the development of the emotions, memory, attention, control, morality, and reason taking place. Hughlings Jackson has pointed out that as evolution in the brain advances there are 'increasing complexity' (differentiation) and 'increasing definiteness'

(specialisation). Now, anything which interferes with this evolution tends to produce mental disorder by arresting mental development. For example, an unstable child, whose parents are of the neurotic type, may suffer from convulsions during the process of teething. These nerve storms may become a habit, and if occurring frequently may interfere with the mental evolution, and imbecility may result. Some children grow up without acquiring such attributes as control and morality, and when they reach puberty, if not before, their deficiency may give rise to grave breaches of the social code of laws.

Thus in early life mental disorder may result from failure of evolution ; the child never acquires its full complement of faculties ; the body develops, but the mental growth does not keep pace with it. On the other hand, insanity may arise through dissolution taking place in the highest centres. The law of dissolution of the nervous system is that the latest acquired, that is to say the least organised, attributes degenerate first. This law holds good whether one is dealing with the motor, sensory, or intellectual attributes. The powers of reasoning, control, and attention are early lost in insanity. Mental dissolution may take place at any period of life, and may be rapid or slow in its course ; but, if it persists, it ultimately ends in weak-mindedness. In early life the mental disorder may be due to congenital defects. The child may lack the sense of sight or hearing, or both, and in consequence has difficulty in acquiring knowledge. Puberty is a period of exceptional stress, especially in the female, and the appearance of the reproductive functions in certain predisposed persons may prove too severe a strain on the organism, and an attack of insanity results. At the climacteric, again, when the power of reproduction disappears, profound changes take place. The bodily and mental functions are slowed, and life is less active, but before this takes place there is a period of peculiar stress which may lead to a mental breakdown. With old age the brain, together with the rest of the bodily organs, begins to atrophy, and in some persons the degeneration of brain substance seems to be more rapid than in the tissues elsewhere. As in all forms of dissolution, it is the highest control that fails first, so that with senility

it is not uncommon to see defects of the moral sense. With old age the insanity may be of any kind; some individuals suffer from a progressive dementia, while others have a temporary mental disorder similar to that which may occur at any other period of life.

To sum up, we shall find that as a general rule the more marked the neurotic inheritance in the parents, the greater is the instability in the offspring, and the more likely the child is to have symptoms of mental disorder early in life. Curiously in some families there seems to be an inherited tendency always to break down at the same period of life. While on the subject of inherited tendency, a moment's consideration should be devoted to the question whether there is such a condition as an Insane Diathesis; that is to say, whether there are individuals who from their constitution, psychical or physical, show that they are more than commonly liable to mental disorder. The terms 'temperament' and 'diathesis' have been used variedly by different writers, so care must be exercised in noting the meaning here attached to them.

Temperament.—Temperament originally was used to indicate the definite relation between the physical qualities of an individual, such as shape of head and complexion, and his mental characteristics, and tendencies and attitude to external stimuli. J. Hutchinson has defined temperament as 'the sum of the innate physical peculiarities of an individual excluding all tendencies to disease.' At the present time the term 'temperament' is used in a much more general way, and chiefly to denote mental characteristics, and is almost synonymous with the expression 'mental constitution.' On the other hand, 'diathesis' deals largely with bodily conditions, and has been defined as 'a morbid constitution predisposing to the development of a particular disease.' Sir Douglas Powell divides unsoundness of constitution into three main groups: (*a*) unsoundness in consequence of *deficient vitality* (the result of alcohol, syphilis, or phthisis, &c. in the parents), (*b*) unsoundness from some definite inherited form of disease (congenital syphilis, gout, scrofula, tuberculosis, cancer, asthma, and certain neuroses), (*c*) the constitution may have become unsound subsequently to birth, either as a result of improper food,

impure air, or by the introduction of certain poisons into the system.

Diathesis.—Dr. Rayner, in Tuke's 'Dictionary of Psychological Medicine,' defines Insane Diathesis as 'a *deterioration of brain, inherited or acquired, indicated by peculiarities of functions, by tendencies to mental disorder, and often associated with bodily stigmata.*' There are two varieties of Insane Diathesis: (1) shown by early and precocious mental and physical evolution, frequently met with in persons of genius; (2) indicated by late and defective evolution with some moral and intellectual weakness. In the latter class the physical stigmata are, as a rule, more marked.

One cannot fail to recognise that there are persons whose natures are highly hyper-sensitive, to whom a look is as painful as a severe rebuke to a more phlegmatic individual. Sensitiveness is an attribute of extreme value, for it is largely by it that we keep in touch with those about us; and a sensitive person is constantly adapting himself to his environment. Nevertheless, when carried to extremes, sensitivity may form the basis of delusions; a sneer may be seen when no such expression was intended, or a smile may be distorted into a look of scorn. Another temperament that is constantly met with is the over-active, restless individual, never quiet for one moment, but often capable of doing a large amount of work. Such a person wants longer hours of repose than his phlegmatic and apathetic brother; he runs through his stock of energy at a rapid rate, and, if he neglects to take proper rest, the end is disaster. Again, how common it is to see a man whose thoughts and actions are always tinged with suspicion! Doubt of the motives of others seems to be the fundamental idea which dominates his life. As years pass, this tendency to suspect everybody and everything grows, and in time begets delusions of persecution. Other forms of constitution might be mentioned if any useful purpose were served; but at the moment it is enough to show that there are variations of temperament, and that there are temperaments which may be called dangerous, as predisposing to mental disorder. Insanity in such cases seems to grow insensibly out of the normal condition, and it is often very difficult to say when the line that divides sanity from insanity has been crossed.

Observe, for example, a young man, whose conceit and self-complacency, though remarkable and far exceeding those of his fellows, are put down to the affectation of youth. Unfortunately, as evolution takes place, this egotism is not tempered by the wisdom of increasing years, but becomes more and more offensive and overbearing, until finally the man is consumed by the vanity of his own importance. Such an individual, sooner or later, frequently develops delusions of grandeur. Probably a good deal might be done in the early training of these individuals in the way of prophylaxis, and we will refer again to this subject when dealing with treatment.

The causes of mental disorder are so numerous that it is impossible to review them fully in so short a chapter. All that can be done is to refer to those factors which seem to be the most powerful in producing insanity. These agencies may act on the developing nervous system, and impede or entirely check the mental evolution, or they may operate on the matured brain and destroy it. The principles of the causation of disease must be learnt, and the student is then able to note for himself the innumerable conditions which are detrimental to a healthy organism.

CHAPTER IV

CLASSIFICATION OF INSANITY

This is a subject which has exercised the minds of many writers, and during the past century numerous classifications have been drawn up. Unhappily each of them must be considered to be more or less unsatisfactory. Some writers endeavour to classify from the psychological standpoint, and to name insanities according to whether the malady touches more closely the emotions or the will. For example, Heinroth's classification rested on the threefold analysis of the mind into—

(1) Intellectual Faculties.
(2) Moral Dispositions.
(3) The Will (including the propensities).

Laycock recommended that an attempt should be made to classify mental disorder from the physiological aspect, and drew up a scheme on this basis. Class I. included disorders of encephalic centres subservient to the instincts and animal propensities, i.e. the medulla oblongata, cerebellum, and posterior lobes of the hemispheres. Class II. comprised the centres subservient to the emotions and sentiments, i.e. the ideagenic or sensorial substances of the cerebellum and hemispheres. Class III. comprised those subservient to the knowing and representative faculties (intellect), i.e. the nerves of the senses, their ganglia, the ideational centres in the cerebral hemispheres.

Other authorities have tried to form a classification based upon the most prominent symptoms of each disorder.

Pinel had merely four divisions—

(*a*) Mania.
(*b*) Melancholia.
(*c*) Dementia.
(*d*) Idiocy.

Esquirol, who came later, made five divisions:

(*a*) Lypermania. This is a disorder of the faculties with respect to one or a small number of objects, together with feelings of depression.

(*b*) Monomania. This is similar to the first group, but in the place of depression there is excitement.

(*c*) Mania. In this the insanity extends to all kinds of objects, and is accompanied by excitement.

(*d*) Dementia—weak-mindedness.

(*e*) Imbecility and Idiocy.

Griesinger recommended a very small classification, which consisted of three divisions—

(1) Mental depression or melancholia.
(2) Mental exaltation.
(3) Mental weakness.

Maudsley divided Insanity according to mental symptoms, and drew up the following classification:

I. Affective Insanity.
   - (*a*) Mania (without delusions).
   - (*b*) Melancholia (without delusions).
   - (*c*) Moral.

II. Ideational Insanity.
   1. General.
      - (*a*) Mania { Acute. / Chronic.
      - (*b*) Melancholia { Acute. / Chronic.
   2. Partial.
      - (*a*) Monomania.
      - (*b*) Melancholia.
   3. Dementia { Primary. / Secondary.
   4. General Paralysis.
   5. Imbecility.

Other writers have endeavoured to classify mental disorders from the ætiological point of view, i.e. naming the insanity after its causations, such as Phthisical or Alcoholic. At the Paris Congress of 1889 Morel drew up a classification which was partly symptomatological and partly ætiological; and the Statistical Committee of the Medico-Psychological Association of Great Britain and Ireland have drawn up a classification upon the same lines. Savage, in his text-book on 'Insanity,' gives what he calls an 'ideal' classification, and in many ways it will commend itself to the student in search of a classification. The various periods of life form a very excellent basis for drawing up a scheme of classification, and no doubt one of the most useful methods of studying insanity is to consider the mental disorders which may appear at the different epochs of life. Certainly a book founded upon this method would be very useful for the practitioner, as it would indicate the dangers to be apprehended and avoided by those who have the care and treatment of neurotic persons. Preventive medicine should be the aim of the up-to-date physician, and it is of vast importance to know the stresses which are likely to bring about nervous symptoms at the various periods of life. Unfortunately to follow this classification in detail would require much more space than can be here allotted to it, as it would be difficult to compress mental disorders into the limits of an ordinary text-book.

Savage's Ideal Classification

Insanity of Early Development.	Idiocy from brain deficiency. Idiocy from sense deficiency. Idiocy from inability to develop. Imbecility from inability to develop fully.
Causes of Insanity from Childhood.	From congenital causes. From epilepsy. From injury or brain disease.
Forms of Insanity in Childhood.	Mania. Melancholia. Moral perversion.

- **Insanity of Adolescence.**
  - Due to—
    - Onset of sexuality, masturbation.
    - Stress of work.
    - Phthisis, &c.
      - (Nervous system only fit for low pressure.)
  - Symptoms:
    - Mania, with conceit.
    - Emotional melancholia and hypochondriasis with liability to recur, and tendency to mental weakness.
- **Insanity of Maturity.**
  - Mania.
  - Melancholia.
  - Dementia.
  - General paralysis due to strain or excess.
- **Insanity of Climacteric.**
  - In women:
    - Delusions.
    - Persecutions.
    - Hallucinations.
  - In men: Often hypochondriacal, due to visceral breakdown.
- **Insanity of Age.**
  - Mania . .
  - Melancholia .
  - Dementia .

  } All tend to dementia.

Krafft-Ebing has drawn up the following scheme:

A. Mental Disorders of the developed Brain.

I. Psychoneuroses.

1. Primary curable conditions.
   - Melancholia
     - Simple and attonita.
   - Mania .
     - Maniacal exaltation.
     - Acute mania.
   - Stupor or curable dementia.
   - Wahnsinn (vesania).
2. Secondary incurable states.
   - Secondary monomania (Verrücktheit).
   - Terminal dementia
     - Agitated.
     - Apathetic.

II. Psychic Degeneracies.

1. Reasoning insanity.
2. Moral insanity.
3. Primary monomania (Primäre Verrücktheit—persecutory, erotic, religious, ambitious).
4. With imperative conceptions.
5. Insanity from constitutional neuroses. { Epileptic. Hysterical. Hypochondriacal.
6. Periodical.

III. Cerebral Diseases with marked Mental Symptoms.

A.—1. Paralytica dementia.
2. Cerebral syphilis.
3. Chronic alcoholism.
4. Senile dementia.
5. Acute delirium.

B.—Arrested cerebral development.
1. Idiocy.
2. Cretinism.

There is no doubt that this scheme is a highly suggestive one, and is capable of much development; but in some ways its complexity makes it difficult from a clinical standpoint, in that it is not always easy for the physician to allocate his cases under their proper headings.

Ziehen gives the following as his idea of a classification scheme:

I. Psychoses without Intellectual Defect.

A. Simple psychoses.

1. Affective psychoses. { Mania. Melancholia. Neurasthenia.
2. Intellectual psychoses. { Stupidity. Paranoia { Simple. Hallucinatory. Ideational. Stuporous. Incoherent. Imperative conceptions.

B. Mingled psychoses.

II. Psychoses with Intellectual Defect.

A. Congenital weakness (idiocy, imbecility, weak-mindedness).

B. Acquired weakness or dementia.

1. Paralytic dementia.
2. Senile dementia.
3. Secondary dementia (after functional psychoses).
4. Secondary dementia (after cerebral lesions, syphilis, &c.).
5. Epileptic dementia.
6. Alcoholic dementia.

In many ways this is a more simple and concise scheme of classification than some of those already cited. It is, however, open to the criticism that paranoia is made to cover too wide a field of cases, and even an expert would have great difficulty in knowing how to classify his patients.

During recent years Kraepelin's classification has been largely used. It is a comprehensive scheme, and one that deserves careful study. It may be somewhat complicated in some of its divisions, but it certainly is quite one of the best classifications which we have at the present time. His scheme is as follows:

I. Infection Psychoses.

(*a*) Fever delirium.
(*b*) Infection delirium.
(*c*) Psychoses characteristic of the post-febrile period of infectious diseases.

II. Exhaustion Psychoses.

(*a*) Collapse delirium.
(*b*) Acute confusional insanity.
(*c*) Acute dementia and hypochondriasis.
(*d*) Acquired neurasthenia.

III. Intoxication Psychoses.

A. Acute Intoxications.

B. Chronic Intoxications.

1. Alcoholism
   - (*a*) Acute alcoholic intoxication.
   - (*b*) Chronic alcoholism.
   - (*c*) Delirium tremens.
   - (*d*) Alcoholic delusional insanity.
   - (*e*) Alcoholic paranoia.
   - (*f*) Alcoholic pseudoparesis.
2. Morphinism.
3. Cocainism.

IV. Thyroigenous Psychoses.

A. Myxœdematous Insanity.
B. Cretinism.

V. Dementia Præcox.

(*a*) Hebephrenic form.
(*b*) Catatonic form.
(*c*) Paranoid form.

VI. Dementia Paralytica.

VII. Organic Dementia.

(*a*) Diffuse lesion.
(*b*) Localised lesion.

VIII. Involution Psychoses.

(*a*) Melancholia.
(*b*) Senile dementia.

IX. Manic-depressive Insanity.

(*a*) Maniacal states.
(*b*) Depressive states.
(*c*) Mixed states.

X. Paranoia.

XI. General Neuroses.

(*a*) Epileptic insanity.
(*b*) Hysterical insanity.
(*c*) Traumatic neuroses.

XII. Constitutional Psychopathic States.

(*a*) Congenital neurasthenia.
(*b*) Obsessive insanity.
(*c*) Impulsive insanity.
(*d*) Contrary sexual instincts.

XIII. Defective Mental Development.

(*a*) Imbecility.
(*b*) Idiocy.

Some authors have attempted to divide insanity into two classes; namely, curable and chronic. This is not a very useful classification, as at the present time the term 'chronic' is used in a sense which appears to the writer to be incorrect. Most authorities in mental disease use the word 'chronic' as indicating that an insanity has lasted a certain time. The term 'chronic' as applied to disease does not, however, necessarily imply that it has lasted through some given antecedent period. It suggests rather incurability. Some disorders, such as dementia præcox, paranoia, certain cases of mania and melancholia, and many other insanities, are chronic from the first, and it is only a question of diagnosis to recognise that this is the case. In dealing with physical diseases we do not hesitate to affirm that a patient exhibiting certain symptoms is suffering from chronic interstitial nephritis, notwithstanding that he has only recently complained that he is out of health. Why should a different test be applied to mental disease? Experience teaches us that there are some cases of mania which at the very outset exhibit marked symptoms of degeneracy, and surely, correctly speaking, being incurable, these ought to be classed as chronic from the very beginning. At first many mistakes will be made; patients who were considered to be incurable will sometimes recover. Every physician must make mistakes, but probably the use of the term 'chronic' in the manner above suggested will induce keener observation and greater accuracy in the examination of patients. It need hardly be added that it is often neither necessary nor advisable to inform the friends of a patient that their relative is thought to be chronically insane. Circumstances must guide action in this respect;

indeed, the physician will seldom err if he regulates his attitude and action in cases of mental disorder by the same considerations as would be applicable to a case of physical disease.

No classification will prove to be wholly or permanently satisfactory unless it is founded upon a pathological basis. It is true that several attempts have been made to formulate a scheme of classification on these lines, and that the results have been most disappointing. This failure is, however, largely due to the small amount of pathological data available. The pathology and morbid anatomy of mental disease are in their infancy, and the accumulation of greater knowledge on these subjects must be awaited before a true classification of insanity can be hoped for. Still, the student must be given some system upon which he may work, some scaffold upon which he may build. Destructive criticism is easy; and although the present schemes of classification are by no means perfect, the student should carefully study some of the more recent systems, as they will greatly assist him in acquiring a knowledge of mental disease. The writer does not wish to add any new classification to the already large number, but will use the following general scheme, which he has drawn up from the classifications of other authors :

1. States of Excitement.
2. States of Depression.
3. Mental Stupor and Catatonia.
4. Chronic Delusional Insanity and Paranoia.
5. Dementia Præcox.
6. Dementia, secondary and organic.
7. Epochal.
   - Puerperal.
   - Climacteric.
   - Senile.
8. Intoxication Psychoses.
   - Alcoholism.
   - Morphinism.
   - Cocainism.
   - Plumbism.
9. General Paralysis of the Insane.

10. Exhaustion Psychoses. { Acute Hallucinatory Insanity. Neurasthenia.
11. General Neuroses. { Epilepsy and Insanity. Hysteria and Insanity. Traumatic Neuroses.
12. Obsessional Insanity.
13. Insanity associated with Physical Diseases.
14. Defective Mental Development. { Moral Insanity, Imbecility, and Idiocy.

This classification has the great objection that it is partly symptomatological and partly ætiological. The writer is aware that this method of arrangement is condemned by some authorities; for to name a disease after its supposed cause is in many ways unscientific, as we may be describing over and over again the same complaint under a different name. For example, under puerperal insanity, mania and melancholia are again referred to, notwithstanding that they have been already described elsewhere. On the other hand, provided that care is taken to point out that no new disease is being recounted, from a clinical aspect this method has its advantages. The practitioner or student can more readily refer to the disorders which may occur at any special period, and the course of the illness can more easily be depicted. Mania associated with senility differs in some respects from the mania of early life; some symptoms which might have been neglected in the adolescent are of great importance in the aged. Every classification of insanity is apt to confuse the student unless he carefully studies the basis on which it has been drawn up. The most simple, and in many ways the most scientific, form of classification of mental disorder would be one consisting of three divisions—

(1) Failure of evolution.
(2) Derangement of normal mental functions.
(3) Dissolution or Dementia.

Many persons are insane because their brain is not equipped with a sufficient number of nerve-cells or a proper complement of association-fibres. Others start life with a normal supply,

but either from disease or decay they become reduced in number or activity. Between this state of amentia and dementia there are many stages. The nervous mechanism may be damaged temporarily and recover, or it may slowly degenerate during a period of months or years. Now, we might give a different name to every phase of this disintegration, according to the clinical aspect. Such are the difficulties which lie in the path of the man who seeks to devise a scientific classification. It is on these grounds that the writer prefers to use a purely utilitarian arrangement, one that is useful to the teacher and comprehensible to the student.

CHAPTER V

GENERAL SYMPTOMATOLOGY

Before passing on to consider distinct forms of mental disease, it may be helpful to the student to devote some pages to the study of those various symptoms which are commonly met with in the insane. In this way much repetition will be avoided, and the advantage gained of familiarising the student with the general aspects of the subject, and so facilitating for him the diagnosis of mental disorder, always a difficult duty to the novice. Once more—a wearisome but necessary iteration—let the beginner be encouraged to approach the study of mental disease in the same attitude of mind as he would engage upon the study of medicine or surgery. Let the principles of the subject first be grasped and thoroughly mastered; afterwards the acquisition of detail will be found to be comparatively easy. There are fundamental principles which must be learned before the student can hope to understand mental disease; it is the ignorance of these principles which makes insanity appear so obscure and even incomprehensible a subject.

In the early stages one must not expect to find too profound a mental change. Insanity, like everything else, has a beginning; and, as a rule, it develops by degrees so slow and subtle that the physician, who only recognises glaring symptoms of mental aberration, will fail to recognise the disorder while in its most curable state. Minor symptoms must receive their due amount of attention, and not be brushed aside, as they frequently are, or ignored as being of little consequence. The student can study mild forms of mental disorder in himself, and he will find such introspection of great assistance in comprehending the more advanced disorders of others. For example, we all have experienced

days on which we have had feelings of malaise and mild depression, when small troubles have seemed vast, when molehills have become mountains. On such days the business man feels that ruin is staring him in the face; the worker feels that, no matter how hard he may work, success is not to be his. Accompanying these feelings there is a restlessness and loss of attention, the sufferer derives temporary consolation from the sympathy of others, but relapses into despondency when solitude returns. Picture yourself *always* in this state, and imagine your worst moments as about equal to the better moments of the acute melancholiac; you will then have some idea of what despair really means. Or, when much fatigued—if quiet introspection is at such a time at your command—try to read a scientific book or write a letter, observing your mental state when a word or question is addressed to you. Or, again, when you are distracted by the fear of some impending disaster, when your thoughts seem confused, and constant walking about seems your only relief, try to sit down for an hour or two; you will then in a feeble way realise what the insane man has to bear when he tries to control his feelings. Thus we learn that what we term mental disorder is not so much the development of something new as the persistence of certain symptoms which in the normal mind appear but seldom and for a short space of time. If a man gives way to an outburst of temper, his friends may regret it, but they do not consider it a symptom of insanity; but suppose that his bad temper becomes chronic, and he is persistently irritable, the probability is that a physician will be called in to examine his mental condition.

We may all at some time in our life conclude, rightly or wrongly, that the disposition of a particular person is unfriendly towards us, yet no one would think of casting a doubt on our mental state if we suggested our suspicions to him; but if we continually suspect the motives and intentions of others, and shape our conduct accordingly, it will not be long before we are looked upon as of unsound mind. Unless a physician is on the watch for symptoms, he will either overlook or misconstrue them. Remember the possibility of mental disorder in examining your various cases. No one can diagnose what is not present to his mind, and, after all,

unsoundness of mind is not an uncommon condition. More cases of mild disorder of the mind are to be met with in general practice than is commonly imagined, and it is as important to diagnose and treat mild or incipient insanity as the more advanced stages. Indeed, in many ways it is more important, for the earlier condition is more curable, and prompt treatment may arrest its development. It is a mistake to apply the term 'insanity' to these mild disorders; but, as a rule, there is no objection to informing the patient and his relatives that the symptoms complained of are nervous in their origin, and require very decided treatment.

Again, it must not be forgotten that certain symptoms standing alone may be of no diagnostic value, but when associated with others they may be of great importance. For instance, a condition of general exaltation may indicate merely a mental state which is common to many forms of insanity, but associated with marked pupillary changes, and hesitancy of speech, it, in all probability, points to some organic disease of the brain. There are physical as well as mental symptoms to be considered when diagnosing or treating insanity, and it will be convenient to divide symptoms under these two heads. The writer always adopts this plan, and it will be found of practical value in examining cases of mental disorder; otherwise important symptoms may be overlooked. Always carry out your examination in a methodical manner. Investigate each case separately, carefully noting the presence of disease in any organs of the body. It is usually advisable to ask the patient regarding his physical health first, for in this way the suspicious person may be thrown off his guard and become more confidential; and in any case questions regarding his body do not provoke surprise in a patient, who might be much alarmed if the interview began by an examination pointing to hallucinations or delusions. Remember, also, that the physician has not merely to determine that a man is insane—a layman can usually do that—he has also to endeavour to find out the cause of the malady. Insanity is not uncommonly the result of some physical disease, in which case the prognosis largely depends on the curability of that disease. Thus we see how important it is to be thorough in our examination,

and to ascertain, if possible, whether mental symptoms are secondary to the physical or *vice versâ*.

Hallucinations and Illusions

Definition.—An hallucination has been defined as 'a false perception of the senses without an external stimulus,' i.e. we see, hear, feel, taste, or smell something which has no apparent external origin. If a face or light is seen in an absolutely dark room, this would be spoken of as an hallucination.

An illusion is a false perception of the senses with an external stimulus. For example, a pattern is seen on the carpet, and is taken for writing; or the wind howling in the chimney is interpreted into the sound of a voice. It is frequently difficult to decide whether the sensory disturbance is in reality an hallucination or an illusion, but illusions are probably more common than pure hallucinations.

As the study of illusions is somewhat simpler than that of hallucinations, their various forms may first be enumerated and described. There are two main divisions of illusions: (1) Passive, (2) Active. The Passive Illusions arise from without, and are largely suggested by external or physical factors; whereas the Active Illusions arise from within and are due to expectancy.

Professor Sully classifies illusions in the following way:

Passive Illusions

1. Exoneural, determined by—

(a) *Exceptional external arrangements*, e.g. a stick immersed in water appears to be bent.

(b) *Exceptional relation of stimulus to organ*, e.g. objects appear smaller, and at greater distance, when one eye is used, than when we use both eyes.

(c) *Illusions of art.*—Stereoscopic effects are instances of this type of illusions, for by means of the stereoscope we get the appearance of solidity and depth.

(d) *The particular forms of objects.*—The limbs or head may seem enormously enlarged or greatly contracted under certain conditions. Drugs such as hashish will produce this effect.

(e) *The points of similarity of objects.*—An illustration of

this is seen in errors of identity. A person sees likenesses to his friends or relatives in the faces of strangers. Probably all differences and defects in the likeness are corrected by imagination, just as, when we are examining printed proofs of manuscript, we are apt to pass over wrongly spelt words, for we intuitively correct the error in our own mind. Mistaken identity is very common in the insane, and may be due to some error of refraction, which causes a blurring of outline of the features, and the result is an illusion.

(f) *The reverse illusions of orientation.*—When travelling by train at night it is often very difficult to decide in which direction we are moving, and by an effort of imagination we can persuade ourselves that we are moving either backwards or forwards.

2. Esoneural, determined by—

(a) *The limits of sensibility :*

(1) Degree of stimulus.
(2) Number of stimuli.
(3) Fusion of stimuli.
(4) After-sensations.
(5) Specific energy of nerves.
(6) Eccentric projection.

After-sensations are a good example of this form of illusion. For instance, we may feel the rolling of a ship for hours after we have landed ; or, in the case of eccentric projection, there may be apparent feeling in the toes, notwithstanding the fact that the limb has been amputated. This latter condition can be explained by 'the law of eccentricity,' which affirms that we refer our sensations to the peripheral endings of nerves.

(b) *By the variation in sensibility :*

(1) *Transient.*—Illusions due to the exhaustion of the various sense organs.

(2) *Comparatively permanent conditions.*—Colour-blindness, conditions of more or less permanent hyperæsthesia, anæsthesia, or paræsthesia.

Active Illusions

In active illusions there is a state of expectancy. For instance, when standing in a crowd waiting for a procession to

pass, we may fancy we hear the music of the band long before it is possible for it to reach our ears. The phenomena seen by various individuals at *séances* are commonly illusions of this type. It is certainly the most frequent form of sensory disorder met with in the insane. In describing the symptoms of melancholia, reference will be made to the part played by active illusions. In fact, in all forms of mental disease expectancy is the forerunner of many sensory disorders. The maniac sees beauty in everything, while to the melancholiac all is gloomy and ugly. What we expect to see we are apt to see, whether it is a smile or a scornful look. If we believe the world is saying things against us, we are prone to hear disparaging remarks. In a word, we are apt to be deceived by our senses.

Before leaving the subject of illusions, mention must be made of another class of illusions which have been termed *secondary sensations*. Some individuals never see a colour without having the sensation of a distinct smell which always seems to accompany that particular colour. In the same way sounds may be associated with colour, or colours with smells.

Bleuler has divided these secondary sensations into—

1. *Sound photisms.* Sensations of colour accompanying sensations of sound.
2. *Light phonisms.* Sensations of sound from perception through light.
3. *Taste photisms.* Sensations of colour from perception through taste.
4. *Odour photisms.* Sensations of colour from perception through smell.
5. *Pain photisms.* Sensations of colour from perception of pain, temperature, and touch.

Certain of the insane are found to have these secondary sensations, and hitherto no satisfactory explanation has been given of the phenomena.

To revert to the consideration of hallucinations and illusions. As already stated, it is frequently very difficult to decide whether we have in a given case to deal with an hallucination or an illusion, for it is often by no means easy to say whether there is any recognisable external stimulus.

Professor Ball believes that even an illusion involves an hallucination, and that there is no fundamental difference between the two. Therefore, from the clinical point of view it is more convenient to consider them together. It will perhaps be as well to state that the presence of hallucinations and illusions does not, *per se*, constitute insanity. Many apparently sane persons suffer from hallucinations; in fact, they may be able to produce them at will; and similarly with illusions, no one is exempt from the risk of being in this way deceived by his senses. But if we are not to rely too much on the presence of hallucinations as a test of mental disease, we must not under-estimate their importance when associated with other symptoms of insanity. Hallucinations are not only very valuable corroborative evidence, but may prove very helpful when we have to give a prognosis.

As a general rule persistent hallucinations are a grave symptom, and a physician should be on his guard not to give a too favourable prognosis regarding a patient who is thus afflicted. Further, it must be borne in mind that the majority of the insane who suffer from hallucinations treat them as if they were realities; for, after all, how can they distinguish between normal special sense sensations and the abnormal? It is true that, if the illusions are indistinct and fleeting, it may be possible to get the patient to ignore them; but if they are vivid and oft-recurring, he will almost certainly be influenced by them. He has trusted his senses in the past, and why should he discredit them now?

Auditory Hallucinations.—Auditory hallucinations are the most common variety, probably owing to the fact that we use the sense of hearing by night as well as by day. It is also the most highly developed sense. Auditory hallucinations usually begin as indefinite sounds, and later become more organised—into whisperings and definite 'voices,' or they may remain as rushing or roaring sounds, or even be musical in character. If they become organised into 'voices,' commonly single words are heard at first, and at a later stage sentences. They may be confined to one ear or heard in both: the voice may be that of a friend or a stranger, male or female. The sound may appear to come from above or below, or even from the abdomen. The conversation may be of a pleasant or

unpleasant character; the words may be persuasive or commanding. Another point of interest regarding auditory hallucinations is that they are very common in deaf persons.

Visual Hallucinations. — Visual hallucinations are very commonly met with in many types of insanity, and more especially in those forms of mental disorder due to drugs such as alcohol and cocaine. They vary greatly in character; they may merely appear as lights or shadows, or may be more complicated. Faces of friends or foes, faces with horrible and distorted expressions, angels or devils, animals or vermin, spectres and ghosts, are some of the forms that these hallucinations may assume. The objects seen may be flat or may stand out in relief. In the matter of colouring the most common type is black or white; a certain percentage are blue, but bright colouring is rare. They may be stationary or float about in the air: others keep moving from right to left. Homonymous hemiopic hallucinations have also been observed, and are usually but not invariably associated with a corresponding hemianopsia.

Gustatory Hallucinations. — Gustatory hallucinations are also common and of importance, as they frequently lead to refusal of food by patients on the ground that the food has been tampered with. In these hallucinations the taste is usually described as 'bitter,' or it may be some compound taste such as that of filth. Hyslop in his 'Mental Physiology' briefly sums up the various perversions of taste as follows:

'(1) *Hypergeusia*, exaltation of the sense of taste, i.e. there is a morbid exaggeration of all gustatory sensations, as seen in some forms of neurasthenia, extreme nervousness, and sometimes even in conditions of mania and melancholia.

'(2) *Hypogeusia*, diminution of the sense of taste; at times met with in acute maniacal or melancholic states, in cases of stupor with general blunting of the sensibility.

'(3) *Ageusia*, absence of sense of taste, met with in some organic conditions.

'(4) *Parageusia*, perversion of the sense of taste, as seen in nearly every form of insanity. Gustatory hallucinations are frequently associated with perversion of smell.'

Olfactory Hallucinations.—Olfactory hallucinations are of

varied kinds. They may be sweet and pleasant, but are more commonly offensive. Savage believes that perversions of smell are closely connected with uterine and ovarian disorders.

Tactual Hallucinations.—Hallucinations of common cutaneous sensibility are frequently electrical in character. Among these perversions of tactual sensation must be mentioned those which lead a patient to affirm that his sexual organs are being tampered with; these are especially common in some cases of paranoia.

Examples of these various types of hallucinations might be given in infinite variety if space permitted, but no good purpose could result.

The physician must always consider what effect any hallucinations may have on a given case. In the first place, it is not always easy to diagnose the presence of hallucinations in an individual who is suspicious and uncommunicative. Watch the patient's movements and general conduct, for in this way much may be learned. Commanding auditory hallucinations are distinctly dangerous, for 'voices' of this kind may lead a patient to do acts of violence against himself or others. Belief that food is being poisoned results in refusal of food except in those cases where the patient is able to cook all his own meals. To sum up: hallucinations of the various senses account for many of the vagaries of conduct in the insane. Some persons are greatly influenced by their presence, and may act upon their promptings. Hallucinations frequently confirm pre-existing delusions. The patient, at first merely suspicious that others are against him, is at length confirmed in this belief by hearing the disparaging remarks, or by tasting the poison which he believes to have been prepared for him. For this reason persistent hallucinations are apt to indicate chronic mental disorder, as the patient bases his life and actions on these altered conditions, not realising that he is being deceived by his own senses.

To explain the development of hallucinations is by no means easy. Some are no doubt peripheral in their origin, while others appear to be central. External ear disease may produce auditory hallucinations in the same way that disorders of the eye or of the skin surfaces may give rise to other sensory perversions.

Other common causes are peripheral neuritis and disturbances of the circulatory system. Hallucinations may be fantastic in their arrangement, but are not absolutely new creations: the devil seen by the melancholiac is the goblin of the fairy tale or the Mephistopheles of 'Faust.' They are all memory-types, and more or less follow the laws of association. Auditory and visual illusions or hallucinations may be set up by any form of stimulus acting on nerve-endings, and thence upon the centres of sight and hearing in the brain. On the other hand, can the centre act independently of any external stimulus? Can it in a sudden and unprovoked way pass into a state of commotion, and cause the reproduction of memory-ideas which may have been latent for years? This question must be answered in the affirmative, as there seems increasing evidence to prove that such is the case. After all, why should it not be possible for the centres to be irritated and set in action by the very blood in which they are bathed, especially when the blood contains toxins or other irritants, as in all likelihood is the case in many forms of mental disease? The effect of drugs in the production of hallucinations is variable, some drugs acting directly on the centres, others on the peripheral ends of nerves.

Hughlings Jackson has ingeniously suggested that illusions and hallucinations may arise in the following way. When any area of the brain is damaged, or becomes functionally deranged, there will in consequence be two sets of symptoms in evidence: the negative symptoms, due to the non-activity of the damaged portion of the brain; and the positive symptoms, due to the over-activity of the lower centres, which are now no longer controlled by the higher centres, which have become disorganised. Hughlings Jackson suggests that illusions and hallucinations may result from the over-activity of the lower centres. Stoddart[1] considers that there is practically no psychical difference between perception, ideation, illusions, and hallucinations, and therefore the differences must be sought among the physical bases of these processes. He states that 'the most obvious difference is that while in perceptions and illusions there

[1] 'The Psychology of Hallucinations,' *Journal of Mental Science*, October 1904

is a stimulus to the peripheral end-organs, in ideation and hallucinations there is no such stimulus; in visual perceptions and illusions the stimulus to the angular gyrus arrives by way of the optic radiations, occipital lobe, and occipito-angular association-fibres; but in the case of ideation and hallucination, the stimulus reaches it by way of other association-fibres than the occipito-angular bundle. Confirmation of this proposition is afforded by the existence of visual hallucinations in the blind, auditory hallucinations in the deaf,' &c. Now, when a patient has an hallucination of vision, there is a negative as well as a positive side to the process. The positive side is that he sees the hallucination image, the negative is that he does not see objects in the neighbourhood of the image. Stoddart considers that hallucination depends upon two factors—diminution of sensation, and disturbance of association; and further that these factors vary inversely in the several conditions in which hallucination occurs. For example, with delirium of fever and in the excited stage of acute mania there is little diminution of sensation and great disturbance of association; in cases of nitrous oxide or chloroform inhalation there is little disturbance of association and great diminution of sensation.

The '*reflex hallucinations of Kahlbaum*' are supposed to arise in another way. An ordinary sensory stimulus acting on a hyper-sensitive sensory centre may set up reflex hallucinations. As already stated, a deaf or blind person may suffer from hallucinations of the senses in which he is defective; on the other hand, the congenitally deaf never have auditory hallucinations, neither do the congenitally blind have visual hallucinations. This clearly shows that, whether the excitation be central or peripheral in origin, hallucinations are the reproduction of former memory-images.

Delusions.—A delusion is a false belief. But here we are met with a difficulty at the very outset. Who is to determine what is a delusion? We are born into a community, and have to conform to its social laws and dictates, and even if we disagree with the rules which it prescribes, we must not actively disobey them. Society, to use the word in its broadest sense, permits a certain amount of latitude in obedience to its regulations; but, in the main, the views of

the majority are paramount. Now, beliefs are largely the traditions and ideas which have been handed down by parents and teachers; they are ready-made and must be accepted. The normal evolution that is ever taking place in all things permits the adaptation of the older ideas to the latter-day demands. The up-to-date woman may adopt the divided skirt, under the belief that it is a healthier form of apparel and permits of greater freedom of action; but should she indulge in so subversive a notion as to think the male attire even more hygienic, and carry her belief into practice, the arm of the law will be at once stretched out to warn her. If the warning is not heeded, society will place her in some safe keeping until she has learnt to conform to the ideas of the majority. So, in considering the question of delusions, we must bear in mind certain ascertained or ascertainable facts. Among the most important of these are the traditions of the country in which we live. For example, if a person were to adopt some of the habits of life in vogue in distant lands, and were to conduct himself in Regent Street as Kaffirs or Basutos do in their country, he would unhesitatingly be pronounced insane. The degree of education and the social status of a person, whose conduct is under consideration, are also important facts, for habits which would be regarded as decidedly eccentric in educated members of the upper classes, might pass unremarked in the lower grades of society.

It is obvious that any one may have a false belief, but the sane man corrects his ideas and conclusions by his reasoning power, he applies his past experience, and listens to the arguments of others. In this way he differs from the insane man, whom no force of reasoning will convince, but who prefers to be guided by his own feelings and sensations. Defendorf[1] writes on this subject as follows: 'Delusions are *inaccessible to argument*, because they do not originate in experience; experience therefore is unable to correct them as long as they remain delusions. Only in convalescence, when they become a mere memory of delusions, can they be recognised as false. At the height of the disease they are as firmly established as reason herself. So long as the morbid conditions which give rise to them persist, the delusions are unchanged. If they

[1] *Clinical Psychiatry.*

are relinquished or modified, the change is not due to argument, but to a change in the morbid condition. Our arguments may drive the patient to admit non-essential points, but the delusion serenely reasserts itself notwithstanding the most evident self-contradiction. Even when the external object of reference or support is destroyed, a new one is quickly found. The delusion needs no other support than the absolute conviction of the deluded.' 'I feel that I am lost for ever!' is the cry of the clergyman, notwithstanding that he has taught the way of salvation to his parishioners for years. Altered feelings and sensations outweigh all arguments and reasoning. Strong emotional states tend to the production of delusions. Some writers believe that the 'clouding of consciousness' is an important factor in their development. This may be so, but perhaps it would be more accurate to say that in some mental states there is *loss of power of comparison.* Memory and attention may be defective, and thus the ideas of the moment may mislead. Especially is this the case when ideas are vivid and impressive. Probably some of the delusions observed in general paralysis and certain delirious states originate in this way. A general classification of delusions may be helpful to the student, and no better can be given than that drawn up by Mercier.[1]

I. *Disorders of the Consciousness of Self.*

A. Disorders of self-conscious feeling.
B. Disorders of thought.

A. There are three subdivisions of the disorders of feeling of self.

(*a*) *Elevation* of self-consciousness. Exaggerated feelings of well-being and vigour. Buoyancy and general exaltation.

(*b*) *Depression* of self-consciousness. Depression and misery.

(*c*) *Alteration of consciousness.* This is a condition, separate from either elevation or depression, in which the feeling of self is altered.

B. *Delusions of the thought,* as distinguished from the *feeling, of self.* These may be general or local. They may

[1] Tuke's *Dictionary of Psychological Medicine.*

include the knowledge of the body as a whole or the knowledge of parts only.

1. *Delusions of knowledge of whole of self.*
2. *Delusions of knowledge of parts of self.*

1. (*a*) In some cases the old self is found to be replaced by a new; a man loses his own identity, and believes that he is something else.

(*b*) In others the old self and the new self alternate. A person passes through alternating phases of existence of days' or weeks' duration.

(*c*) Further, in other cases the old self and the new self co-exist, and the patient believes himself to be two persons at once. This is met with in those persons who suffer from a double hallucinatory condition, e.g. where the auditory hallucinations of the right side quarrel with those of the left.

2. (*a*) Partial disorder of the knowledge of the whole self is seen in those persons who, while preserving a knowledge of their own identity, believe that they are changed in some important particular, as, for instance, in sex, or that they are composed of glass or iron.

(*b*) Cases of disorder of the knowledge of parts of self are also common; for example, a man may believe that his head is open, and that his brains have been removed, and replaced by some other material.

II. *Disorders of the Consciousness of the Relation of Self to Surroundings.*

This is further divided into—

(a) *Delusions of the relation of self to surroundings.*—These are of two kinds, delusions either of increased welfare or diminished welfare. Under the first head fall delusions of power, of wealth, of influence, including the delusions of those who think themselves millionaires, kings, &c. Under the second head fall self-accusatory delusions.

(b) *Delusions of the relation of surroundings to self.*—These are similarly divisible into delusions of beneficent relation and delusions of inimical relation. The former include the delusions of those who believe honours or commands are conferred upon them; the latter, an exceedingly

common and in practice a most important group, include the delusions of those who believe themselves to be the victims of persecution. Substantially all classes of delusions are included in the above classification.

Delusions are found to be present in nearly every form of mental disorder. In some conditions they seem to be the outcome of the insanity ; in others they seem to form its very basis. For example, some delusions are merely the explanation offered for altered feelings ; these are common in the case of emotional insanities such as mania and melancholia. The patient feels miserable, and, as Savage tersely puts it, 'explains his condition from the standpoint of mind, body, or estate.' These delusions may be fleeting and transient, or may become more organised. On the other hand, in the ideational forms of mental disorder, delusions are slow in development, and may for years pass almost unnoticed. Delusions of grandeur and pride may spring from a haughty nature; jealousy and suspicion may be the forerunners of definite delusions of persecution.

Delusions are the outward and visible sign of an altered mental state. Lawyers and jurymen feel that they have some tangible proof of mental disorder when a definite delusion can be instanced, but to the physician its presence is of little importance, except as lending some assistance in indicating the line of treatment. A question of far greater importance is, 'Why is the delusion there?' Delusions are merely symptoms, and the physician must endeavour to discover the reason for their presence. This sounds like emphasising the obvious, but it is the obvious that often is overlooked. Many a physician thinks that he has discovered everything about a patient when he has definitely detected a delusion. He has not: the delusion may be here to-day and gone to-morrow, while the mental disorder may persist. In some cases delusions are ever changing, and are merely the audible reflection of a passing thought. The term 'fixed delusion' has been applied to that class of delusion which is more or less permanent, and which is a dominating factor in the life of the patient. There are also so-called 'fixed ideas' and 'obsessions,' but these will be dealt with elsewhere. The presence of delusions does not necessarily argue mental weakness, and

clinically it will be found that many who suffer in this way are perfectly capable of transacting business, provided their delusions are not such as to obscure judgment in matters to which their business relates. Delusional states are frequently associated with hallucinations, and may be secondary to the sensory disturbances. In alcoholic insanities and those forms of mental disorder due to poisons, the delusions are as a rule the result of hallucinations, while in other types of insanity the hallucinations are usually secondary to the delusion.

Delusions occur both in the sane and the insane. Taken by themselves, they do not necessarily indicate insanity, but their presence is strongly indicative of mental disorder when they are found in conjunction with other evidence, such as failure of general conduct and neglect to conform to the ordinary rules of life and society.

Disorders of Attention.—In Chapter I. reference has been made to disorders of attention. The importance of inattention as a symptom is very great. It usually occurs in every form of mental disease, and accounts for much of the inaction exhibited by the insane. A person who is preoccupied in considering his own thoughts and feelings cannot apply himself to the wants of others; it is largely for this reason that the insane keep so much to themselves. As mental improvement takes place they become more altruistic, and more attentive to the requirements of their fellow-patients. Attention is of late development, and therefore goes early; and inattention, or easy distractability, is frequently one of the earliest symptoms which are noted in the onset of mental disease.

Subject-Consciousness and Object-Consciousness. — Closely connected with hyper-attention and inattention are the rise of subject-consciousness and the fall of object-consciousness, which are such prominent symptoms in mental disease. The meaning of these terms has been already described in a former chapter. As Bevan Lewis shows, the rise in subject-consciousness is the *positive* aspect of the patient's mental state, and is that which attracts the most notice. This is very markedly the case in melancholia, where every thought and action of the patient is coloured by his miserable feelings.

Similarly the decline in object-consciousness represents the *negative* aspect. 'The decline in object-consciousness which occurs in states of pathological depression presents us with the following features : (*a*) enfeebled representativeness ; (*b*) a lessened seriality of thought (weakened attention) ; (*c*) diminution or failure in the muscular element of thought.' [1]

Muscular Element of Thought.—Bevan Lewis points out that, in addition to the five special senses, there is a sixth sense, the muscular sense, which tells us of size, position, and form. He goes on to show that the full perception of things about us is largely due to the proper and vigorous working of this muscular sense. Now, if this sense undergoes any diminution, correspondingly the space attributes of the body become less vividly conceived. Proper vision is largely dependent upon the muscular mechanism involved in our perception of objects. Bevan Lewis also observes that 'we must distinguish between that portion of the muscular element which enters into our higher intellectual concepts, and that grosser factor of the larger musculature of the limbs &c. which subserves the purpose of locomotion and coarse movements. The sense of muscular contractions which forms the basis of the primordial ideas of form, size, and position, lapses eventually in consciousness as a pure sense of muscular contraction. With the larger musculature this is not so ; it is essential that the movements of the limbs, their contraction and tension, should be exquisitely registered centrally, as thereby alone can we gain an idea of their position in space apart from the sense of sight, and appreciate the relative weight of objects and the resistance offered by them. The unrestrained action of these muscles signalises to our minds the absence of external resistance, and the rise in the muscular sense which accompanies any resistance opposed in the direct measure of such resistance. Similarly with the "Muscularity of Thought," which in the normal state is of free and easy play, the rise into consciousness of its primordial muscular element means effort, and at once suggests to the mind the same notion of *resistance* in the *environment*.' Now, with failure of object-consciousness there is a sense of resistance in the environment ; thus the melancholiac does not grasp his

[1] *A Text-book of Mental Diseases.* Bevan Lewis.

relation with the external world. Again, if a man fails to do a thing on account of loss of object-consciousness, he is annoyed, and there is a further rise of subject-consciousness ; his idea of self alters, and delusions result, usually by way of explaining the altered conditions.

Disorders of Memory.—Disorders of memory have already been so fully dealt with in Chapter I. that it merely remains to state those types of insanity in which memory-defects will be found. As a general rule, the memory is not very defective in acute functional forms of mental disorder, and if it is found to be lost or progressively failing, it generally indicates some organic change. Care must always be taken in testing the memory, as it may appear to be defective when the condition is really only due to lack of observation ; this is often the case in acute mania. Further, memory must be tested for both recent and remote events, and it is the failure of memory for recent events that is of most diagnostic value. It is frequently a matter of great difficulty to decide whether a person with loss of memory, and with no other marked mental disturbances, should be placed under care. It is largely a question of the financial position of the patient. If his circumstances are sufficiently affluent to insure his receiving careful attendance at his home, it is rarely necessary to send him away. If, however, his means do not enable such provision to be made, it may be expedient to place him in safe keeping. Loss of memory may seriously affect conduct. An amnesic person may seriously contravene the moral and social codes. He may relieve his bladder in some public place in entire ignorance that he is offending, or he may wander away from home and be totally unable to account for himself. Frequently loss of memory leads to inability to provide means of livelihood either for the patient himself or his dependants.

There is little doubt that patients afflicted with loss of memory are in many cases happier and better cared for in asylums than they can be elsewhere. There is certainly an increasing tendency to send senile amnesiacs of the pauper class into asylums, and this, to a certain extent, accounts for the great increase in the insane population in these institutions. Though this is well for the patients, it is bad for the ratepayers. It would be a wise economy if suitable

infirmaries could be established for cases of this type, as it would relieve the costly machinery of the regular asylum. As already observed, if there is marked loss of memory, the prognosis is usually bad; but there are two notable exceptions to this rule. In certain cases of alcoholic insanity and in some forms of stupor the memory is bad, and yet there is a fair chance of recovery. Loss of memory is most marked in the following forms of mental disorder: (1) general paralysis of the insane; (2) chronic alcoholism; (3) progressive mental disorder; (4) senility; (5) organic dementia. In all these the prognosis is bad. Partial hypermnesia is sometimes found in imbecile and weak-minded persons. There is one patient at the present time in Bethlem who never forgets the name of any one to whom he is introduced, and he will recall the name even after some years. Paramnesia or illusions of memory are especially common in chronic alcoholic insanity. These patients will romance to any extent, with no idea that they are departing from the truth.

Impulsive Acts.—Impulsive actions take place during passive attention, and have to be distinguished from voluntary or volitional acts, which occur during active attention. Obsessions or imperative ideas are largely associated with active attention, and may in time monopolise the whole attention. Thus a difference is to be observed between a purely impulsive act and an imperative idea. In Chapter I. reference has been made to the common forms of impulse met with in the insane. These are very varied, and may result in injury to self or others. Morbid impulses may be exhibited in sexual desires or in an irresistible impulse to steal or set fire to everything. Excessive greed and a desire to eat all manner of disgusting things belong also to this category.

Disturbances of the Emotions.—Disturbances of the emotions are very common in the insane, and, in certain instances, may form the chief symptom of the mental disorder. In the early stages of general paralysis of the insane, and in several varieties of insanity, the emotions may be in an exaggerated state of irritability. Small annoyances may cause outbursts of passion and temper. At one moment the patient may be laughing, and at the next weeping. The emotions seem to be poised in a condition of unstable equilibrium, and are ever

ready to respond violently to slight stimuli. This condition is very commonly seen in states of excitement apart from organic disease, but as a general rule, a tendency to outbursts of emotional weeping in men is a symptom of grave import. On the other hand, the emotions may appear dull and fail to respond to even strong stimuli. This is observed in some cases of melancholia ; a patient may be told of the death of a near and much-loved relative, and be apparently unaffected by the news. Again, fear, and constant anxiety, are symptoms frequently met with in many types of mental disorder. Morbid emotional states may be temporary or permanent. If they last, they tend to become more acute. With progressive mental deterioration the emotions fail, together with the other attributes of the mind. A general condition of apathy is found in most idiots and imbeciles, and in many patients suffering from secondary dementia.

Exaltation.—In mental disease, the term 'exaltation' denotes delusions of grandeur, wealth, and importance; it must be distinguished from excitement, which is quite a different mental state. The tendency of the casual observer is to diagnose most exalted persons as suffering from general paralysis. Consideration of this disease will show that it is a physical derangement, and that the mental symptoms are to a certain extent accidental, and referable to the ravages of the disease upon the brain. In some cases of general paralysis there are no marked mental changes for a long time, and then merely a progressive dementia. Any form of mental disorder may be encountered in general paralysis, depression being almost as common as exaltation. The student must therefore be careful not to fall into the common error of diagnosing general paralysis from the symptom of exaltation, which is common to many forms of insanity.

Exaltation is merely a mental state, and is to be found frequently in the following varieties of mental disorder: (1) simple mania ; (2) chronic mania ; (3) paranoia ; (4) delusional insanity; (5) certain forms of alcoholic insanity; (6) some varieties of epileptic insanity ; (7) some cases of dementia ; and (8) general paralysis of the insane. Exaltation, at times, seems to grow out of a natural tendency to be egotistical, and later passes on to inordinate conceit and self-complacency.

The patients are as a rule youthful in such cases; nevertheless they believe themselves to be possessed of wonderful powers. They consider themselves to be talented beyond their fellows, especially in subjects such as poetry, drama, or composition. There are some cases in which exaltation is merely an exaggerated sense of well-being; in others it is, as Savage graphically puts it, 'the mast sticking up when the ship has gone down'—in other words, the last remnant of a mind now completely disorganised.

Habits.—It has already been observed that the law of habit is a form of the law of association. If, for example, we begin to doubt the intentions of those around us, in time it will become second nature to us to treat with suspicion every one with whom we come in contact. The insane are very liable to develop bad habits, and these frequently interfere with the prospect of recovery, for a patient may learn to base the working of his whole life on these habits, and in such a case their eradication will be found to be almost impossible. On the other hand, there are a number of habits which it is possible to break, and those in charge of the insane should constantly endeavour to encourage the patient to correct them. Biting the nails is a sign of irritability and restlessness. Some patients are constantly removing their clothing, not necessarily with the intention of exposing themselves, but rather from a desire to be free from all covering, which seems to irritate the skin. Others will dress themselves in an extravagant way, and decorate themselves with flowers or bright-coloured ribbons. In certain forms of insanity the mental state seems to revert to the early schooldays, when all manner of rubbish was collected and stowed away in the pockets. The æsthetic sentiment may be diminished or lost, the patient may become careless of dress and general appearance, or he may show great extravagance and squander money in a reckless manner.

Destructiveness of all kinds is common in the insane. Some destroy with the intention of constructing something new out of the remnants, but they never get further than the destruction of the original article. Others destroy in a reflex impulsive manner, and often will tell you that it is a great relief to throw things down or break something. Ravenous eating

is another habit which should be corrected. This symptom may be due to irritability and loss of control, the patient not giving himself time to eat a meal, or it may be the result of an inordinately large appetite. Eating all kinds of rubbish and picking pieces of food from the waste bowl is a habit of some patients—this is usually a symptom of degeneracy, and few of those who practise it recover. Some patients will not attend to the calls of nature—this may be wilful neglect, or due to general mental confusion.

Sexual malpractices are also common in the insane. Masturbation is a frequent symptom both in the male and in the female. It is a practice that is often looked upon as a cause of mental disorder. Probably this is the case in a certain percentage of neurotic individuals, but it is far more often a symptom of mental disease. Masturbation may be merely a vice learned at school, and it is a difficult question to say how far it may be the duty of parents and teachers to warn boys of the evil effects which may result from the practice. No definite age can be fixed for talking to a boy on sexual matters, as some children are more precocious than others, but it is most important for those who have the charge of boys to be very watchful, and not hesitate to speak if they observe any suggestive symptom. With care it is quite easy in a conversation to see if a boy understands what is being referred to, and if it is noticed that he is ignorant, the subject can be changed at once. Many youths are greatly relieved at having a chance of being able to speak to some one on the subject, as not infrequently they have already been frightened by reading quack literature. It should be clearly pointed out to the boy that to continue masturbation is to run the risk of undermining his whole constitution, and ruining himself in mind and body. On the other hand, his mind should be set at rest by telling him that up to the present no permanent harm has been done, and that if he conquers the habit he will soon be strong and well again.

Except in the case of very neurotic subjects, masturbation does not cause mental disorder ; it chiefly produces apathy and general listlessness, and at times leads to tremor of the face during speech. If carried to excess there are marked symptoms of fatigue, and the pupils are usually widely dilated. In the

insane, masturbation is a very trying symptom, and most difficult to treat. Other sexual malpractices are not uncommon in very degenerate types of mental disorder, and especially in some forms of paranoia. These cases are important from a medico-legal aspect, as the sufferers may place themselves within reach of criminal law. It is often very difficult to defend these persons, as, with the exception of inordinate conceit, it is often impossible to find any other symptom. Their mental aberration is shown entirely by disorders of conduct, and they are therefore hardly distinguishable from the ordinary criminal. Nevertheless it is the duty of the physician to defend these persons if he considers them to be victims of nervous degeneracy, and not degraded criminals.

Suicide.—Suicidal tendencies are so very common in the insane that the subject must be included in a chapter on General Symptomatology. The question of suicide is a very large one, and has exercised the minds of men since the very earliest times. In some periods of history suicide was not only permitted under certain circumstances, but was even expected as the natural sequel of some events. Formerly the 'happy despatch' was the customary end of a Japanese who had compromised himself either officially or socially. Space will not permit a general review of this subject, nor is such a survey required in a book of this kind, where the study of the relationship of suicide to insanity is all that is relevant. The tendency to suicide varies in different forms of mental disorder, but it is most rife in states of depression—indeed, it is not too much to say that every melancholiac must be looked upon as a potential suicide. Suicide may be accidental or intentional. A maniac or general paralytic may accidentally kill himself in an attempt to perform some impossible feat. Another patient may actually destroy his life when his intention was merely to attract the sympathy of others, or to draw attention to his case.

The reasons given for attempts at self-destruction are so varied, that it would be impossible to enumerate them. Among the common reasons assigned by would-be suicides the following may be recorded: (1) that they are unfit to live; (2) that they are ruined morally or financially; (3) that they are a source of danger or contamination to the

rest of the community; (4) that they may avoid constant persecution; (5) that they are impelled to do so by 'voices' urging suicide; (6) that various delusions compel suicide; (7) sleeplessness; (8) continual worry; (9) that others may be saved, &c. A certain number of patients act purely on impulse; suicide suggests itself in some form, and is at once carried into effect. Similarly a man may destroy himself in a fit of passion—this is at times seen in the case of epileptics. Children frequently commit or attempt suicide, and the triviality of the motive given is often extraordinary.

The methods employed for self-destruction vary in different individuals. The most dangerous class are those who spend their time in devising numerous plans, and who would avail themselves of any possible means of carrying out their intentions. The average person prefers some particular method which specially appeals to him. For instance, a man has been known to swim a river to reach a railway, in order to throw himself in front of some passing train. This peculiarity is of great importance in the treatment of suicidal persons, though it is dangerous to rely on the patient adhering absolutely to his chosen plan.

There is little doubt that a far larger number of persons contemplate self-destruction than are actively suicidal. After all, it is not surprising that suicide should suggest itself to the depressed and worried mind. It is natural that the troubled soul should seek that portal which, once passed, ends for ever the sufferings of mortality, for the truly depressed person usually feels that he has nothing to hope for in this world or the next. The physician need never fear that by asking a person whether he has suicidal feelings he may be making the first suggestion of self-destruction to the patient's mind. Not only is there no such risk, but it is the duty of the physician to talk to a depressed patient on this question. It is a subject from the discussion of which most persons recoil, and to which they will not initiate any reference, but it is often a great relief that it should be opened by another. The thought of suicide is one which is accompanied by intense suffering; not merely the suffering which has suggested suicide as a means of escape, but also that which is engendered by the feeling that even the contemplation of self-destruction is a

grievous sin. If the physician explains that the desire to commit suicide is quite a common symptom with depression, and tell his patient that he should speak as freely about any suicidal impulse as he would about any physical symptom, he will almost surely both relieve his patient and help those who look after him. Suicide is most likely to occur in the early morning, between 5 A.M. and 10 A.M. Between those hours the melancholiac is most depressed, and ought to be kept under strict supervision.

With regard to the question whether a suicide fully realises the nature of his act, it is probable that the majority of persons attempt to destroy themselves when in a confused condition of consciousness—in fact, almost in a dream state. Probably the idea of suicide has been uppermost in their minds for a long time, maybe they have been fighting against the feeling, and ultimately, in a semi-confused state, the act is done or attempted. It is interesting to note that immediately after a would-be suicide has committed the act, he may, if a fatal result does not at once ensue, try to save himself, and, if he be successful in so doing, the incident often proves the turning-point in the illness, and from that moment he may make an uninterrupted recovery.

Homicide.—There is probably no insanity in which the desire to kill stands as the only symptom. Homicidal feelings are by no means as common as the lay mind would suppose, and the percentage of dangerously homicidal patients is decidedly low in any asylum, save in the criminal one at Broadmoor. On the other hand, impulsive violence is common, but only a small percentage of patients with this symptom can be looked upon as homicidal. The really dangerous man is he who quietly awaits his chance, plotting and scheming for days before he carries his intentions into execution. The writer has heard a patient say that, owing to the continual persecution to which he had been subjected, he felt perfectly justified in killing the man whom he believed to be his persecutor. Many homicidal persons are fully aware that it is against the law of the land that they should murder, and may even recognise that they may have to pay the penalty society exacts. Another patient told the writer that he intended to kill two persons who had wronged him, adding, 'I know that I may

be hanged myself, but after all it will be two lives for one.' Perhaps the most dangerous type of insanity is the mental disorder which follows a major or minor attack of epilepsy, and more especially the latter, acts of violence being very common during the automatic stage which follows the fit. The melancholiac may murder his whole family before he commits suicide, as he will not leave them to starve.

In some cases the homicidal impulse seems to be of the nature of an obsession, for the idea to kill usurps the whole attention. With these persons the attack is generally very sudden and determined. 'Voices' may urge a man on to murder. Some years ago when a gentleman was walking up Regent Street he heard a 'voice' telling him that he must kill some one at once. He ignored it for some time, but the commands became more urgent, and, the phenomenon being so extraordinary, he began to lose confidence in himself. As matters were nearing a crisis, the 'voice' gave him an alternative, and the order was, 'You must at once kill some one or go to an asylum.' He was relieved to find any way of escape, and at once hailing a hansom, told the man to drive to the nearest asylum. He reached Bethlem in an agitated condition, and begged that he might be taken in as a voluntary boarder. The patient remained in the hospital for about six weeks, and was then discharged recovered.

At times the desire to kill may take the form of a periodic impulsive insanity, and may resemble dipsomania in its manner of onset. These patients may confide their troubles to their friends or medical attendant, and it is important to remember that these confidences must not be treated too lightly. The very fact that a man will own to such terrible thoughts proves the intensity of them in his mind. Many a murder might have been prevented had some one only given the patient the assistance which he sought. There is another point which is worth remembering regarding the treatment of would-be murderers. If an insane man has a grievance, listen to him and argue with him in a liberal manner if you like, but never turn away and refuse to hear what he has to say. A sane man is intensely annoyed if he is treated in what he considers to be a high-handed way, but the insane man may lose all control and make a violent assault, which

would probably not have been made had he received what he regarded as a fair hearing. You are perfectly at liberty after the interview to inform the man's friends or the police that you consider him to be a dangerous person. Many fatal assaults might have been avoided if people would remember to treat the man with a grievance in a courteous manner. The question of homicide will be further dealt with in the chapter on the Relationship of Insanity to Law.

Fatigue.—Fatigue states are so closely allied to mental disease, and are seen in so many types of insanity, that some reference must here be made to them. The rapidity with which fatigue appears varies greatly in normal persons, and it can be produced by either mental or physical exertion. Some of the insane fatigue very rapidly, and it is with great difficulty that their attention can be held for more than a few moments together. With fatigue there is not only loss of attention, but there is diminished power of association and defective memory. Again, weak stimuli, which in a normal state would have been unnoticed, now become painfully unpleasant. Every one has probably experienced how annoying the ticking of a clock or the rattling of a window may be when he has been exceptionally tired. With fatigue the reaction time is longer, and the subject will give a large number of premature reactions; that is to say, he will react before the signal has been given. The pupils will be found to be widely dilated, and the deep reflexes are usually exaggerated.

Fine muscular adjustment, such as writing, fails; the handwriting is changed, and shows mental irritability. With fatigue we find both increasing irritability and restlessness. With irritability, muscular movements will be found to be irregular and spasmodic. The judgment is inaccurate and unreliable, and there are outbursts of temper on the slightest provocation. Irritability is to be observed in the early stages of many forms of mental disorder, and ought to be the warning note that rest is necessary. Quick temper and great irritability are some of the earliest mental changes in general paralysis.

Restlessness is a very important symptom, and one that does not always receive the attention due to it. With mental fatigue there is almost always restlessness; the student

reading for an examination will note this, as no sooner has he sat down to read than his attention wanders, and he gets up and does something else. The weary busy man paces up and down his office trying to concentrate his thoughts, and the more exhausted he is the more energetic he seems to become. Few seem to realise that this morbid restlessness is almost, if not actually, within the danger zone which separates sanity from insanity. There is no symptom which requires more immediate attention. When we finally cross the line and enter the realms of insanity, restlessness is a common and prominent symptom, especially in such disorders as mania and agitated melancholia.

Jealousy.—In primitive life jealousy is closely associated with sex. The male is jealous of the female, and the female for the welfare of her offspring. As society becomes more complicated, jealousy is found in many other phases, but it is still in sex relationship that it plays the most prominent part. As a symptom of mental disorder it is by no means uncommon, and a very trying symptom it is to those who may be the objects of its attention. It is far more common among women than men, and in the mental disorder of some unmarried women and in widows jealousy frequently plays an important part. These women generally select some man, commonly a clergyman or some young physician, and continually dog his path. If there is any obstacle in the form of another lady in the way, murder has been known to result. Women of this type have no shame; indifference and even definite objection on the part of the victim make no difference. The devotion is steadily maintained. This form of mental disorder is often most difficult to treat. There is nothing to which one may point except their extraordinary conduct, and even this may not be so marked as might be expected, as they show much cunning in preventing attention being drawn to their actions. Their conversation, though foolish and extravagant at times, cannot be considered as more than eccentric. Many a man has been seriously compromised by a woman of this type, notwithstanding every effort on his part to escape her devotion. These cases are not understood by the lay mind. There is always a strong disposition to champion the cause of a woman; the charitable public is ever ready to point

the finger of scorn and to hound a man out of society, without even hearing his defence. No more trying fate can befall a young man than to find himself the object of regard of an insane woman of this kind. The friends of such a woman should at once be told of the annoyance which her conduct occasions; letters received and copies of all letters written should be carefully kept.

Further reference will be made to jealousy in the description of the mental disorders of the climacteric period. A mother may be jealous of her children; and an insane parent has been known to murder a child in order to spite his wife or her husband, as the case may be. Cases at times occur where a young man is insanely jealous of some girl who refuses to marry him, and she not infrequently falls a victim to his jealousy. Jealousy may occur alone or associated with other symptoms of mental disorder. In any case, it is useless to attempt home treatment if the patient is jealous of any relative residing in the house. The only prospect of recovery is in getting the patient away from the customary surroundings.

Movements.—In an earlier chapter it has been shown that movements are the muscular expression of mental action. It has been shown that in infancy movements are spontaneous and uncontrolled, and how these movements gradually become controlled as childhood advances. With dissolution there is a reversion to this former state. The restlessness of delirium and mania belongs to this class, and even the fidgety movements so common with fatigue must be regarded as falling into the same category. All through the day we are slowly passing from a higher to a lower state of evolution, and it is only with rest and sleep that the equilibrium is re-established. With the agitated melancholiac there is often constant movement.

Stoddart has drawn attention to a marked difference in the movements of persons suffering from mania as compared with those of the melancholiac. He has pointed out that the maniac's movements are chiefly from the large joints, while those of the melancholiac are principally connected with the fingers and smaller joints. This is a very important observation, and when considered with the microkinesis of infancy

it shows how strong the relationship really is between the movements in the early states of evolution and those of dissolution. Rhythmical movements are also common in the insane, notably in catatonic and some depressed states. Delusions may be shown by movements, for some patients constantly mirror their thoughts by their actions.

Heart and Vascular System.—Heart disease is not more common among the insane than the sane, and the causes are the same in both. If a person with aortic regurgitation becomes insane, the form the mental disorder takes is usually that of excitement and restlessness, as in mania or agitated melancholia. In the case of mitral disease, especially during the early stages, the mental state is usually one of depression. The arterial tension varies in different forms of insanity, and is a symptom of much diagnostic value. The writer made a careful study of the blood-pressure in the insane, using for his investigation Barnard and Hill's sphygmometer. The results of this work were published in the 'Lancet,' June 25, 1898, and the following are the deductions arrived at:

1. That the blood-pressure varies in certain forms of insanity.

2. That the blood-pressure is *raised* in persons who are depressed or who are suffering from melancholia.

3. That the blood-pressure gives varied results in persons suffering from melancholia with motor excitement, so-called agitated melancholia. (The writer has made further investigations in this form of insanity, and has found that the blood-pressure is almost invariably low, and for this reason he considers that agitated melancholia ought to be classed with mania.)

4. That the blood-pressure is found to be normal upon the recovery of a patient whose blood-pressure has been raised during the period of depression.

5. That the blood-pressure is *lowered* in persons suffering from excitement or acute mania.

6. That the blood-pressure is found to be normal after the excitement has passed off and the patient has recovered.

7. That the blood-pressure tends to fall as the day dvances; hence the melancholiac tends to improve through-

out the day, and the excited patient to become more excited.

8. That the depression following on an attack of acute mania is not necessarily an active depression, but rather a reaction and condition of exhaustion, and that the blood-pressure in these cases may remain low, until it finally on recovery returns to normal.

9. That the blood-pressure is probably raised in stupor.

10. That the blood-pressure is not always altered in delusional insanity, except in those cases where there is also some emotional disturbance.

11. That the blood-pressure in healthy, active, and excitable persons is low compared with the healthy but apathetic individual.

12. That from the above it would appear that the blood pressure is chiefly affected in the emotional insanities in contradistinction to the ideational forms of mental disorder.

13. That the blood-pressure is raised in general paralysis of the insane when there is no depression, but that in the excited types of this disease the blood-pressure is low, as it is also in the later stages of all types of general paralysis.

14. That there is evidence to prove that the altered blood-pressure may in certain individuals induce mental aberration, but that it is so far not complete enough to justify a definite statement that mental disease is usually caused by altered blood-pressure.

15. That the altered blood-pressure in different forms of insanity suggests the line of treatment which may be adopted in the various kinds of mental disease.

16. That the feeling of weight and pressure on the top of the head, so common a symptom in melancholia, is apparently vascular in origin, and is lessened or disappears when the blood-pressure is lowered.

17. That certain depressed patients improve with treatment by nitro-glycerine, but that there is difficulty in keeping the blood-pressure down with this drug, as its action is so evanescent.

18. That the action of erythrol tetra-nitrate is more prolonged and reliable, and is more powerful in lowering the blood-pressure in melancholia than nitro-glycerine.

19. That the prolonged bath raises the blood-pressure, and hence is of more value in the treatment of excited patients.

The frequency of the heart-beat is increased in several forms of mental disease, and most notably in acute mania, in which disorder the pulse-rate is not uncommonly as high as 140. On the other hand, with profound depression, the frequency of the heart-beat may be lessened and the general circulation found to be very sluggish. The condition of the blood is also at times markedly affected, diminution of the red blood-corpuscles and deficiency of hæmoglobin being commonly observed, and, what is of even greater interest, a large increase of the white corpuscles is present in some forms of insanity. The coats of the blood-vessels are found to be atheromatous and degenerate in a certain percentage of cases, and all the changes due to former syphilis may be observed.

Respiratory System.—The respiratory system is not markedly affected in patients suffering from mental disorder. In mania, and in certain cases where the frequency of pulse-rate is increased, it will be found that the normal ratio between heart-beat and respiration is lost, as the breathing is not accelerated to any appreciable extent. In some forms of insanity, and more especially in stupor and catatonia, the respiration is very shallow and the movements of the chest are slight. This is of importance, as it may tend to the development of phthisis in predisposed persons.

Secretory Disorders.—In melancholia and allied conditions all the secretions are diminished in quantity. Stoddart has done some very instructive and valuable work on this subject. He found that the sensible perspiration was greatly diminished or absent in these cases, and further that the patient, when treated with jaborandi or subcutaneous injection of pilocarpine, usually gave no reaction. On the other hand, he observed that with maniacal patients a similar dose produced profuse perspiration and salivation. It is further interesting to note that Stoddart found that if a melancholiac was treated with erythol tetra-nitrate for some days, it was then possible to get a reaction to pilocarpine or jaborandi. The saliva is diminished in melancholia, and this, together with insufficient

secretion of the digestive juices, may account for the indigestion and anorexia experienced by a certain proportion of melancholiacs. The hydrochloric acid in the gastric juice varies, and may be either increased or lessened.

Salivation in the insane may result from several causes. Nevertheless, it may be merely apparent and not real when saliva is seen to be constantly dribbling out of the corners of the mouth. In these cases the saliva is probably not swallowed owing to diminished reflexes in the pharynx. Excessive and continual masticatory movements may, by purely mechanical means, produce a very copious flow of saliva. Salivation may be due to disease of the central nervous system, and is seen in certain cases of epilepsy. The urine is diminished in quantity in melancholia, and seldom reaches more than thirty ounces per diem, whereas polyuria is common in general paralysis and hysterical cases. The reaction is usually acid, but the urine may contain a large amount of phosphates in cases where there has been great cerebral excitement. The quantity of urea excreted varies, being diminished in depressed states and increased to a small extent in mania. The chlorides, sulphates, oxalates, and glycero-phosphates all vary in amount in different forms of mental disorder. Indican is rarely found, but should be always looked for, as it usually indicates auto-intoxication. Albuminuria is far from being a common symptom in mental disorder, but it is met with in a certain proportion of alcoholic patients, and following seizures in some cases of general paralysis and epilepsy. Glycosuria is not so frequently found as some writers would indicate, but the question of diabetes will be dealt with elsewhere.

Menstruation.—The catamenia are usually disordered in most forms of insanity. Menstruation is, as a rule, absent in melancholia and in many other types of mental disease. Probably it is an effort on the part of nature to conserve energy, and amenorrhœa must, in the vast majority of cases, be considered a symptom in the course of the insanity, and not the cause. This is important to remember, and the physician would do well to inform both the patient and friends of the true state of affairs, as the former is apt to be worried and anxious, whereas the latter may be over-energetic in their

attempts to re-establish the function, under the belief that its absence is the cause of the mental trouble. In some cases, notably certain forms of mania, there may be metrorrhagia or menorrhagia, and the continued and profuse loss of blood may seriously interfere with chances of recovery. As a general rule the absence of the catamenia is a favourable symptom in mental disease, and their reappearance not uncommonly indicates general mental and physical improvement. On the other hand, re-establishment of all the functions when unaccompanied by mental improvement greatly increases the gravity of the prognosis.

Constipation.—Reference has already been made to constipation as a cause of insanity; it must now be considered as a symptom in mental disorder. Stress has been frequently laid in these pages on the fact that the physical health always suffers to a greater or less degree in every form of insanity. Constipation is probably the most common of all symptoms. In melancholia it is scarcely ever absent, and requires constant attention. Constipation may result from sluggishness of functions or deficiency of intestinal secretions. In some cases there is found to be at post-mortem actual narrowing of the bowel, more especially with hypochondriacal melancholia. In other cases the fault may lie in defect of innervation and lessened peristalsis. Whatever may be the cause—and the physician should discover the fault if possible—constipation is a symptom which should never be forgotten, as it is a cause of anæmia, sleeplessness, and general discomfort, and may even form the basis of delusions. Its treatment will be dealt with elsewhere.

Disorders of Sensation.—There may be disorders of organic or special sensation, or both. Apart from general hallucinations and illusions, which have been already referred to, the special sense may be disordered. The acuteness of taste may be lessened, or taste sensations may be altered; this is seen in the voracious appetites of some patients (bulimia). These persons may consume all manner of filth, and even such things as nails and hair. When it is possible to elicit why these things are eaten, the reason sometimes given by the patients is that they have a constant feeling of faintness or nausea, and that matter of all kind allays the sensation.

The patients so affected are chiefly idiots, dements, and maniacs. The taste should always be tested, and solutions of salt, sugar, and quinine are generally used in the examination.

Disorders of the intensity of sensation are of all kinds. There may be anæsthesia, hyperæsthesia, or paræsthesia, and these vary in extent and degree. Apart from organic causes, anæsthesia is fairly frequently met with in the insane. Especially is it met with in melancholia and stupor. A very extensive anæsthesia is generally found in patients recovering from acute mania, but it is usually only of a temporary nature and may disappear in a very few days. Probably such anæsthesia and analgesia are psychical in origin, but the evidence at present obtained is not cogent enough to decide the question. Nevertheless, whatever may be the cause of these perverted sensations, whether they are peripheral or central, it must always be remembered that altered sensations are a very potent factor in the production of delusions. They lead to an altered idea of self, and the tendency is for the person so affected to endeavour to account for the changed state of things. This is especially the case when the organic sensations are disturbed.

A word of warning may be useful: do not be too ready to class all complaints of disordered feelings as delusions. Frequently patients will misinterpret their sensations, and it is the duty of the physician to find out, if possible, whether there is any organic disease to account for the symptoms. A good example of this is the mental aspect met with in some cases of locomotor ataxy. Tabetic patients may misinterpret the ordinary physical symptoms, and may explain the gastric and other crises by extraordinary delusions. Thus altered sensations may have an organic origin, and before such symptoms are classed as delusions organic disease must be sought for.

Trophic Disorders.—Nutritional changes take place in all the tissues of the body in patients suffering from mental disorder. One of the earliest symptoms of acute insanity is loss of body weight. Too much stress cannot be laid on this point, as careful attention to the weight of the body is the keynote of both preventive and curative treatment. Trophic changes take place in the hair and nails, both of which

become brittle; the skin in many of the insane will be found to be dry and harsh, and pustules and small abscesses may develop. Bed-sores may occur in some patients in an almost incredibly short space of time. Trophic changes in bones may render them liable to fracture.

Hæmatoma Auris.—An effusion of blood may take place between the cartilage of the ear and its perichondrium. This condition is known by the term Hæmatoma Auris or Othæmatoma. Some persons speak of it as Insane Ear, but this is a misnomer, for the condition is found also in the sane, as, for example, in some Rugby football players. It is very common among the chronic insane and general paralytics, and its presence is usually considered to indicate incurable mental disorder. It is almost always due to some slight injury. Holding a patient's head with one arm while feeding is one of the commonest ways of producing a hæmatoma auris. Probably it is owing to this mode of origin that it is more frequently found in the left than in the right ear, as most attendants hold the patient with the left arm while they feed with the right hand. No violence nor even rough handling need have taken place, as very slight manipulation is necessary to produce the condition: patients may even cause it themselves by rubbing the ear with their hands or against the pillow. When first seen it is a smooth tense swelling, usually bright red in colour, which occupies the anterior and outer surfaces of the auricle, and is limited to the cartilaginous parts of the ear. It is tender to the touch. The hæmatoma may rupture or slowly become organised; in any case the result is great wrinkling and puckering of the ear. Hæmatoma auris is the result of an effusion of blood from the minute vessels in the perichondrium, but whether the effusion is due to vessel wall degeneration or to blood changes is not known. The proper treatment for this condition is blistering the cyst with a blistering fluid, and if this is done early very little deformity may result.

Disorders of Speech.—Stuttering and stammering are commonly found in the relatives of the insane, but not so frequently in those who are actually of unsound mind. The speech may be incessant, rapid, and incoherent, or it may be slow and laboured. By incoherence is meant an apparent

want of connection in the sequence of language. In other words, it is an inability on the part of the hearer to follow the thoughts of the speaker. There is a difference between wandering conversation and true incoherence, for in the former, notwithstanding that the speaker strays from subject to subject, his thoughts can be followed. A patient once said to the writer, 'Maternal, paternal, infernal, Dante.' In this case his thoughts could be easily followed, as the first three words rhymed, and the last was an association of ideas. The maniac has an accelerated flow of ideas, while the thoughts of the melancholiac are slow and laboured.

Mutism is present in a certain number of the insane, and may be due to the absence of ideas or the result of a delusion. It is a prominent symptom in catatonia and other stuporous states, and is present of course in the congenitally deaf. Hesitancy and slurring of speech are defects which may indicate serious cerebral disease. Tremulousness in articulation may be toxic in origin, but is a symptom which may also point to organic disease. These symptoms will be more fully considered when dealing with general paralysis. Aphasia of all kinds is met with in the insane. Sudden and transient aphasia is very suggestive of general paralysis.

There is an interesting variety of speech, met with in catatonia and some other types of mental disorder, known as Verbigeration. This is a monotonous repeating of words or phrases. In conclusion, it may be mentioned that in conversation many of the insane repeat the question put to them; this is often done in an automatic manner and as a means of gaining time, and is the result of slow ideation.

Insomnia.—Sleeplessness plays such a very important part both as a cause and symptom of mental disorder, that a short chapter has been devoted to its study.

Temperature.—The temperature of the body in the insane varies in the different forms of mental disorder, but broadly speaking it is not commonly raised in mental disease. It is important to make a habit of taking the temperature of these patients, as frequently fever is the first indication that we may have that the patient is physically ill. Insane persons do not as a rule complain of subjective sensations, therefore in treating them it is ever necessary to be observant. For

instance, in general paralysis, fever not infrequently precedes 'seizures,' and in many forms of mental disorder it connotes some lung complication or other bodily ailment. Subnormal temperatures are usually found in stuporous states and in melancholia, and raised temperatures in acute delirious mania and in some cases of puerperal insanity. There may be hyperpyrexia in conditions such as status epilepticus. To sum up, fever in the insane generally indicates some physical disease in the same way as it does in the sane.

Reflex Disorders.—The superficial reflexes are not very important factors to be considered in insanity. They are useful in the diagnosis of hysterical conditions, as the plantar reflexes are usually lost. The deeper reflexes are affected in many forms of mental disorder; they may be exaggerated, diminished, or lost. The knee-jerks are often very exaggerated in states of excitement or extreme exhaustion. Too much weight must not be attached to the condition, but, on the other hand, they are common in general paralysis. Loss of knee-jerk is a symptom of far greater importance, as it frequently points to a tabetic form of general paralysis. The physician must, however, bear in mind that it may be due to peripheral neuritis. The changes in the pupillary reflexes will be described in the chapter on General Paralysis.

Expression.—The facial expression is not a very reliable indicator of the emotions in the highest and lowest mental states, for in the highest the emotions can be concealed, and in the lowest there is a general lack of expression. Still, facial expression is probably a truer index of action and thought in the insane than in the sane. There are certain points to be noticed in examining the face and expression. The face may appear lengthened and toneless, the result of general muscular relaxation; this is commonly seen in melancholia and some cases of general paralysis. Terror and anxiety are shown by the facial muscles, the emotional tremors being caused by strong and intermittent nerve currents transmitted to the various muscles. Pain, to a great extent, is shown in the lower part of the face; this is especially the case with visceral pain. Mental stress is usually indicated by over-tone of the corrugator supercilii, which causes knitting of the eyebrows. Twitching of the supra-

orbital muscles is said to be common in forms of mental disorder due to alcohol.

It is important to note the shape and size of the head, whether it is symmetrical, or whether there is lack of development on one side, as is seen in some cases of traumatic idiocy. A head with a circumference of less than seventeen inches is incompatible with intellect. Note also the eyes, whether there is any drooping of eyelids; whether the eyes work together, or the eyeballs are prominent. Exophthalmos is a common symptom in some maniacal patients, and is probably due to congestion of the venous circulation at the back of the orbit. The size and various reactions of the pupils should be examined, mydriasis being commonly found in nervous and fatigued persons. Note the movements of the eyeballs in their sockets as distinguished from the various movements of the head, as the former indicate a higher state of evolution than the latter. An infant usually turns its head when its attention is attracted by a sound, the independent movement of the eyeballs being of later development and sometimes never acquired. Observe also the quickness of expression and the rapidity of reaction to stimuli, and further observe whether the two sides of the face act together and to an equal extent. The presence or absence of hair on the face is a point worthy of attention, for it must be borne in mind that degeneracy in the male may be shown by absence of the customary hair on the face, whereas a female degenerate is often hairy.

Posture.—We are ever moving our position, and every posture is temporary, and may be looked upon as a balance of muscular action. Warner[1] describes four principal postures of the head: '(*a*) Flexion. (*b*) Extension. (*c*) Rotation to one or other side in a horizontal plane, the head remaining erect, but the face being turned to the right or left. (*d*) Inclination to one or other side, lowering one ear so that the two do not remain on the same level.'

Flexion of the head and a general flexion of the body are seen in most cases of melancholia, and in certain forms of stupor. Extension of the head may be due to spinal irritation, or merely the result of a delusion. Rotation usually suggests

[1] 'Posture,' in Tuke's *Dictionary of Psychological Medicine.*

an hallucinatory condition. Persons may throw themselves into positions of prayer or other ecstatic postures. The reader need not be detained longer on this subject except to remind him that much may be learnt by observing the posture of a patient. The exalted man will appear proud and self-complacent; the depressed man flexed and drooping; the persecuted man suspicious and anxious.

Handwriting.—The handwriting, being the production of highly developed and co-ordinate muscular movements, is often of great diagnostic value in the study of disease. Handwriting is of comparatively late development, and therefore is early affected in every form of nervous disorder. Even with fatigue the clearness and character of the writing are found to be altered. In studying handwriting in its more highly developed forms, it will be observed that there is a great difference between the up and the down strokes, for the latter are bolder and stronger and show greater weight of the hand on the pen. With dissolution this difference between up and down strokes disappears, and every stroke will be heavy. The pressure of the pen on the paper is of interest, for a child learning to write cannot even use a pen without covering itself and the paper with ink, and owing to the weight of the child's hand it is necessary for a pencil to be used. So again with increasing dissolution the writing will once more be found to be blotty and untidy, and the day comes when a pencil alone can be used. In the early stages of any nervous disorder the up-strokes of writing will be observed to be shaky, indicating tremor of muscles when lightly stimulated. With increasing age a general shakiness becomes very evident, though as a rule the general character of the writing is not markedly affected. Tremulousness is also noticeable in the handwriting of patients convalescing from any serious illness. A keen observer can glean a great deal as to the health of a relative or friend by noting his handwriting. If the correspondent is weary and tired, the handwriting shows irritability and uncertainty, and further it is usually smaller and more cramped, as is the case in the writing of the aged.

There are several other points to be observed in dealing with the handwriting of the insane. Some patients write slowly and with great effort, either from difficulty in thought

or effort in the production of the various letters. If the latter is the case, the letters will usually be found to be separate and not run together. In some forms of mental disorder, and in general paralysis, there is a tendency to drop out letters or syllables, showing constant irritability and failure of attention. On the other hand, words may be reduplicated. Some patients write an enormous amount, either of prose or poetry, and the correspondence of these individuals is frequently very large.

Further, much can be learned as to the mental state of a person by studying the contents of the letters he writes. The melancholiac's notes are filled with gloomy thoughts about the present and fears for the future; the hypochondriac fills his letters with descriptions regarding his bodily health; the exalted man with grandiose ideas and extravagant schemes. The moral pervert may spend his time in writing libellous post cards; this symptom of mental disorder is rather more common in women. Suspicions and delusions of persecution may first show themselves in the contents of a letter. Before leaving the subject of handwriting, an interesting variety known as mirror writing must be named. It is found in certain degenerates, and may be a symptom in some persons suffering from mental disorder. Mirror writing is usually effected by the left hand, and is written from left to right, and can only be read by means of a looking-glass, or, if the paper on which it is written is very thin, by holding it up to a strong light.

In reading the following accounts of the various forms of mental disorder, it will be well for the student, from time to time, to refer back to this chapter on General Symptomatology, so that he may keep clearly before him the exact significance of the symptoms recorded.

CHAPTER VI

STATES OF EXCITEMENT

Excitement in its various degrees is much more readily recognised than depression, and it is easier to say when the line which divides sanity from insanity has been crossed, for the reasoning power is, as a rule, lost quite early. For this reason acute mania is one of the few forms of insanity recognised by the lay mind, for if a man is noisy, destructive, or violent, it does not require a physician to diagnose that such a person is insane. On the other hand, it is not enough to say that a patient is suffering from mania; the question further arises as to what is the cause of this excitement. Excitement, like depression, may be the whole visible evidence of the condition; or it may, on the other hand, be associated with other symptoms which connote gross brain disease, or the grouping of symptoms may be such as to indicate a disorder such as manic-depressive insanity or recurrent mania. Thus mania is merely a symptom or a cluster of symptoms: it is a mental state in which excitement is the prominent symptom. It is, however, necessary to examine the patient carefully for any physical symptoms indicating organic disease or pointing to general paralysis.

Ætiology.—Excitement may occur at any period of life, but is more common in the earlier epochs. It is almost physiological in its mildest form during childhood, but as evolution takes place the emotions become more and more controlled. Again, with senility the highest levels may degenerate first, with the result that the power of inhibition is lessened, and outbursts of excitement or other symptoms, due to loss of control, ensue. Mania is by no means so commonly met with as depression, but in many ways it is a more serious disorder. It must be borne in mind that delirium is temporary mania, and in certain neurotic subjects it may pass on

to ordinary acute mania. Sex is not an important factor, but women are somewhat more liable to attacks of mania than men. A definite neurotic inheritance is found in a fairly large proportion of cases, and especially in patients who break down early in life. The instability may have shown itself previously by too rapid or too slow evolution, or a tendency to night terrors or other psychoses. Phthisis may be found in the family history, and, if associated with insanity, is very liable to lead to mental disorder in the offspring. Exciting and anxious forms of occupation predispose to mania in some persons, and this fact should be remembered when advising concerning the education of a neurotic youth. There are certain types of mental constitutions more liable than others to develop mania, and to permit such persons to go upon the Stock Exchange, or to adopt other similar professions or occupations, is to court disaster. Ill health and starvation are potent factors in the production of mania.

There are certain toxic conditions which may in predisposed persons tend to produce excitement; more especially may be instanced alcoholism, plumbism, uræmia, and drugs, such as belladonna. Mania may arise from a defective blood supply to the brain, or from a vitiated condition of the blood. During the febrile stage of specific fevers excitement may develop; in short, anything which produces delirium may engender acute mania. Epileptic furor is a very violent form of excitement, which sometimes follows a fit of epilepsy. In the female, childbirth may be followed by an attack of mania; and finally, sleeplessness is also a factor which must not be forgotten.

Varieties.—There are several types of mania which must be recognised. Attacks of mania may occur periodically throughout the lives of some people, or mania and melancholia may alternate with periods of health. The terms *periodical*, *recurrent*, and *circular insanity* are used by most writers to denote these cases, but Kraepelin has pointed out that where mania and melancholia occur under such conditions, the symptoms are not accidental, but should more properly be considered as phases of one disease. He describes these cases under the head of *manic-depressive insanity*, for, as he rightly shows, the disorder follows a definite course, which is usually

repeated in each succeeding attack. Kraepelin recognises three forms of manic-depressive insanity, viz. the *maniacal*, the *depressive*, and the *mixed*. Older writers would describe these as *recurrent mania*, *recurrent melancholia*, and *folie circulaire*.

As mania may exist apart from these periodic or circular conditions, it will be more convenient to describe maniacal states under the following heads:

(1) *Simple mania*, in which there are usually no delusions. It frequently occurs early in life, and has a tendency to recur periodically, or may alternate with a phase of depression. (2) *Acute mania*. Some authorities consider this to be a more intense form of simple mania, others make a distinction between them. Certainly it is more liable than simple mania to end in a state of permanent weak-mindedness. This disorder may appear at any age, but is more common in adolescence and early middle life. (3) *Recurrent mania*. This may be either simple or acute in type. (4) *So-called agitated melancholia*. The writer thinks that this form of mental disorder should more properly be included under the head of mania, as the restlessness and many of the accompanying physical symptoms closely resemble the symptoms occurring in states of excitement. (5) *Acute delirious mania*. Some authorities consider that this is the last and most advanced stage of acute mania, but the weight of evidence seems strongly to indicate that it should be recognised as a distinct and definite disease. In addition to these varieties of mania, the student must bear in mind that excitement may be the mental state of a certain proportion of persons suffering from general paralysis or other forms of gross brain disease. In these cases the excitement is entirely secondary to and dependent upon the organic disease.

Prodroma.—The onset may be gradual or sudden, but the former is more common. A sudden outburst of excitement may occur in recurrent cases, or may be secondary to an epileptic seizure, or due to drugs, such as alcohol or belladonna. As a rule there is a period of malaise or depression, during which time the patient is sleepless and loses weight; this may last for some days or weeks before the over-activity and restlessness of mania appear. As the excitement develops,

the patient never tires of propounding brilliant schemes for the future; he rises very early in the morning, and retires late to bed. His conduct becomes as erratic and uncertain as his conversation. He dresses in an extravagant fashion, and spends money rapidly. He is irritable, and refuses to be controlled. Loss of control is the prominent feature of both his actions and his conversation. The power of attention fails rapidly, and he becomes unable to hold a connected conversation, or carry out any of his usual duties. Judgment and reasoning are soon affected, and it is on this account that there is but little difficulty in deciding when the bounds of sanity have been passed.

Mental Symptoms.—(1) *Simple Mania.*—In this condition there is an exaggerated sense of well-being. The patient is buoyant and in the best of spirits. He is extravagant in his dress and squanders money. He may be very exalted as regards both his wealth and his social rank. In this connection a word of warning is needed. These cases are frequently diagnosed as general paralytics from their mental symptoms alone. Once again let emphasis be laid on the point that general paralysis is a physical disease, and may be accompanied by any form of mental disorder. Exaltation *per se* does not connote general paralysis. The patient with simple mania is garrulous and talkative, and much that he says is unconventional and bizarre. He is exceedingly quarrelsome, and often throws up his occupation with the intention of going on the stage or following some other pursuit which is more suited to his exceptional mental powers. He usually gets engaged to be married to several young women in quick succession, as his ideas of marriage are ever changing. He will generally be found to be boastful; loss of control stamps his every thought and action.

The memory is not markedly affected, but the attention is easily distracted. The emotions constantly vary; more commonly the patient is exuberant in spirits, but he is always liable to outbursts of passion, and sometimes will lapse into tears. He may change his creed, and from being an indifferent Protestant he may become a devout Romanist. As a rule, there are no hallucinations, and delusions, if any, are temporary and fleeting. Patients suffering from simple mania

are generally sleepless, waking as a rule early in the morning. There is a tendency to indulge in sexual excitements. The appetite is capricious; the patient may at different times eat largely, or go without food for many hours. The physical health is fairly good, though it may fail if the illness goes on for some months. Patients of the class are not by any means always certifiable, and many of them can be treated by rest at home. Others are so difficult to control that asylum treatment is absolutely necessary.

(2) *Acute Mania.*—In this disorder both the mental and physical symptoms are more marked than in simple mania. There is more loss of control in speech and action. These patients are constantly on the move and never rest; they may sing, dance, laugh, or shout continuously. Speech is very incoherent, and, though the attention may be attracted for a moment, the thoughts will soon wander. Patients of this class are very quick both in sight and hearing, and their senses are hypersensitive in their acuteness. They are careless of the presence of others, and for the time being seem to live in a world of their own. These patients are frequently considered brilliant in their conversation. This is not actually the case, for when analysed this seeming brilliancy will be found in large measure to be due to the unconventional character of their chatter. They say smart things, which strike the hearer, who is not used to home truths and personalities, as amusing. These patients are often more entertaining when ill than during health, for through loss of control they will in illness make remarks which they would in health perhaps think, but forbear to utter.

The acute maniac may rhyme, or his ideas may be suggested by objects round about. These patients are usually very impulsive and destructive, and at times may be violent. They are often considered almost superhuman in their strength, but in reality they are weaker than in health. They appear to be strong, for they have singleness of purpose and use all their strength in one direction, and in this way they differ from the sane person, as the latter is constantly inhibiting his actions. For example, a maniac would use all his strength to remove an annoying person from his room, heedless of whether in carrying out his intention he either damaged

himself or his persecutor. Their actions are in keeping with their mental state. They collect all manner of rubbish, filling their pockets with worthless articles after the manner of schoolboys. Young women tie bits of string round their fingers to replace any rings that have been removed, and decorate their hair with ivy and flowers. They are often irritable, and may quickly lose their temper and strike, and may accidentally kill, but intentional homicide is rare.

Usually these patients are happy and cheerful, but the emotions may undergo a sudden change, and the tears of one moment may give way to the laughter of the next. It is by no means uncommon to find that they mistake identity, and will address those about them either as relatives of their own or as celebrities of the day. Memory is fairly good, but at times uncertain. It is, however, remarkable how many details of his illness a patient of this type will remember after recovery. The habits vary greatly, according to the severity of the attack. Some patients are very degraded and will eat all manner of filth, while others will strip off their clothing. The sexual instincts are exalted, and give rise in both sexes to immodest actions and speech, and at times to shameless masturbation.

Delusions are ever changing and are usually exalted in character; the maniac may adhere to a delusion for some time, but, as a rule, if contradicted he will abandon his belief or replace it by another. Similarly hallucinations are temporary and fleeting. Music and other sounds may be heard, or faces and lights may float across the room. Auditory hallucinations are more common than visual sensory disorders, except in cases of mania due to some drug-poisoning. Sleep is very deficient and may be absent for weeks, and profound insomnia is very characteristic of this disorder. In the severe forms of acute mania a patient will spend his nights and his days in constant movement and continual laughter and speech. Such patients are apt to wear themselves out, and to die from exhaustion. Attempts at suicide are rare, but a maniacal person may kill himself by accident in trying to do some impossible feat. To sum up: all maniacs are capricious, and are swayed by their constantly changing thoughts and ideas; continued occupation is

impossible, and employment depends on the fancy of the moment.

(3) *Recurrent Mania.*—The periodic or recurrent forms of mania, or the mixed variety of Kraepelin's manic-depressive insanity, usually appear during the earlier epochs of life. The excitement varies in intensity, and delusions and hallucinations may both be present. As a rule each succeeding attack leaves its effect on the intellect of the patient, who becomes progressively less capable of doing work. Many of these cases ultimately pass into a state of dementia.

(4) *So-called Agitated Melancholia.*—As already stated, the writer considers that this condition rightly belongs to maniacal states. True, the emotional attitude tends to depression, but the majority of the other symptoms resemble mania, for there is constant restlessness, the patient being seldom quiet for a moment, either by night or day. The pulse is small, low-tensioned, and rapid, in contradistinction to the full high-tensioned slow pulse of the melancholiac.

(5) *Acute Delirious Mania.*—There is usually an insane inheritance in these cases, and in addition some definite exciting cause, which may be either physical or mental. The onset closely resembles that of an acute specific fever; there may be a few days of malaise and insomnia, but this is soon followed by intense restlessness and general excitement. Incoherence of speech is an early symptom, and the patient becomes noisy. It is very difficult to attract his attention even for a moment, and the sufferer will sit up in bed chattering to himself and constantly swaying about.

Memory is almost entirely obliterated for the time being. Hallucinations, especially of sight, are very common; delusions of all kinds occur, but they are very fleeting and constantly changing. The face is flushed, and the pulse is very frequent and low-tensioned. Food is refused, and has to be given artificially by means of an œsophageal or nasal tube. The tongue is furred, and sordes form on the lips and mouth. The temperature is nearly always raised two or three degrees, and in this it differs from other varieties of mania. The urine is scanty and high-coloured; the excretions are

passed under the patient. He rapidly develops a typhoid condition, lying in bed in a state of low muttering delirium. He differs from the sufferer from enteric, in that he resists all attempts at nursing. Bed-sores frequently form even in spite of every care.

Physical Symptoms.—The physical symptoms differ greatly according to the severity of the attack. In simple mania they are slight, and, except for some loss of weight, may not be well marked. On the other hand, in forms of mania such as acute delirious mania, physical conditions are very severely affected and may occasion grave anxiety.

Gastro-Intestinal System.—The tongue is usually furred, and there may be sordes about the lips and mouth. The appetite is as a rule bad, but the maniacal patient is very capricious in the matter of food; he may eat one meal ravenously, and refuse the next two or three. It is often necessary to feed these cases by means of the nasal or œsophageal tube, otherwise rapid loss of weight with serious results may ensue. Constipation and general irregularity of bowel action are common, but not so constant as in melancholia.

Circulatory System.—The pulse is frequent and low-tensioned. The frequency may reach as high as 140–150 beats a minute.

Respiratory System.—The rate of breathing is not materially increased; the usual ratio between heart-beat and respiration is lost.

Genito-Urinary System.—The quantity of urine secreted in some cases is greater than normal, while in others it is less. The menstrual functions in women are always disordered. The catamenia may be scanty and irregular, or entirely absent, throughout the attack; on the other hand, there may be menorrhagia or metrorrhagia. Some patients have exacerbations of excitement either before or immediately after the catamenia, while for a fortnight between the periods they may to all appearances be well.

Nervous System.—Except for a general hyperæsthesia of the special senses, the nervous system does not exhibit any special symptoms. Maniacal persons will constantly strip off their clothing, but it is not clear whether this is due to altered bodily sensations. After an attack of mania

it is common to find a temporary general anæsthesia, which passes off rapidly.

Stoddart has drawn attention to the striking differences in the movements of the maniac as compared with the melancholiac. The movements of the maniacal patient take place for the most part at the large proximal joints, whereas in melancholia these are weak or rigid. The *body weight* usually falls rapidly, and there is general emaciation. The skin and appendages suffer from nutritional changes. Small pustules may develop; the nails are friable, furrowed, and contain opaque patches; the hair is dry and brittle—it loses its lustre, and sometimes falls out. The patient may become very anæmic as the illness proceeds. The temperature is usually about normal, except in cases of acute delirious mania, when it is often raised. There is a tendency to salivation in some cases, but this is not a constant symptom. Stoddart found that the maniac reacted readily to pilocarpine and jaborandi. Sleep is very bad, and its continued absence may lead to very serious consequences. Maniacal patients not uncommonly develop some intercurrent affection, especially disorders of the respiratory system.

Course.—Mania may run a very rapid course, the acute symptoms passing off within a few days. Mental excitement of this type is often spoken of as mania transitoria; it occurs in certain alcoholic and epileptic cases, and is seen also at the time of labour in some very neurotic subjects. It is a violent attack of excitement that passes off as rapidly as it appears. Recovery usually takes place more slowly, commonly after eight or nine months. The disease reaches its height after five to ten weeks, after which the physical health tends to show signs of improvement. Food which has previously been refused is now taken, the appetite being abnormally large. The mental excitement fluctuates from day to day, but shows an improving tendency. The hair and the general appearance of the patient become more tidy. Sleep improves, but slowly. There is a greater tendency to help in the domestic work of the wards of the hospital, and the restlessness is less marked. Some patients become quarrelsome and fault-finding as they progress towards health, and are a sore trial to nurses and those in authority.

They make all kinds of false accusations of rough treatment, assaults, and the like, which on careful inquiry prove to be baseless. More commonly, patients who are recovering from mania pass into a confused and apathetic condition, in which they take little or no interest in their surroundings, and rarely occupy themselves. These patients, as a rule, steadily improve in their physical health. The condition is not one of true depression, but is rather one of general fatigue resulting from the intense excitement through which they have passed. It resembles the feeling of malaise and apathy experienced by some persons after several evenings of dancing and social excitements. Finally complete recovery may take place. A patient may, however, reach a certain point towards recovery, and then remain in the same condition until discharged; ultimately he may get quite well.

Persons in asylums and under care as a rule appear to be much better than they really are, and to allow them too early freedom has a bad effect, and is apt to cause a relapse. Many patients who have apparently recovered are found to be defective in one or more respects; this is especially noticeable in persons recovering from simple mania. Savage aptly describes the condition as the scar that is left after the illness has passed off. The scar may show itself in many ways, as, for example, in mental or moral defects. A man, previously energetic and keen, may become idle or indolent. He may develop habits of drinking or gaming, which show a lack of control. From being placid and easy-going, he may become irritable and passionate. There may be either complete or partial recovery. More commonly recovery is partial, but sufficiently well marked to render the patient capable of earning his own living. On the other hand, a number of cases never recover, but steadily pass into a weak-minded condition.

All insanities tend to dementia, but mania more strongly than most. The patient may improve physically and his weight increase, sleep may return, and the bodily functions which were formerly deranged may be normally performed. Nevertheless, with all this improvement he may remain weak-minded, noisy, and destructive. Many of these patients should be classed under the head of dementia præcox, but

the diagnosis is not always easy, and the term *secondary dementia* is useful. Death supervenes in about 5 per cent. of cases. The cause of death may be some intercurrent disease, but exhaustion alone is by no means infrequent. There has been great opposition to this latter view, but residence in a large hospital for acute cases would convince the most sceptical on this point. Death occurs from exhaustion resulting upon starvation, and in acute excitement there is undeniably serious defect in the nutrition of the brain. It is also instructive to observe that starvation commonly leads to mania of the delirious type. An autopsy on the body of a patient who has died from acute mania reveals no signs of organic disease. In some of these cases the conclusion that death has resulted from exhaustion is irresistible; and this conclusion is supported both by the clinical and post-mortem evidences.

Diagnosis.—Excitement itself is not difficult to diagnose, but care must be taken not to confuse the delirium of some fevers with acute mania. Carelessness in this respect has led to patients suffering from pneumonia or some specific fever being sent to an asylum as insane. Delirium is temporary insanity, but it is not proper or usual for ordinary delirious patients to be certified as of unsound mind. A raised temperature should always put a physician on his guard, as fever is rare in mania except in the condition known as acute delirious mania. Examine the patient carefully for any rash. Uræmia has also been mistaken for mania. Try and determine whether the excitement is purely functional in character, or whether it is the mental aspect of some organic disease. Never forget to look for symptoms of general paralysis. The mental excitement of the latter, when it occurs, is usually very acute, and the patient is most unreasoning and more insane than is the case with ordinary mania.

Alcoholic conditions are at times difficult to differentiate from simple maniacal states, and it is especially hard to distinguish delirium tremens from acute delirious mania. The temperature is raised in the latter, and subnormal, as a rule, in delirium tremens; also in acute delirious mania the patient is flushed, while in the alcoholic delirium he is pale and of anæmic appearance. The alcoholic is afraid of his hallucina-

tions, but the ordinary maniacal patient shows no such fear. Drug poisoning must also be borne in mind in making a diagnosis. Epilepsy and seizures should also be considered. Hysterical cases at times are difficult to diagnose, but they exhibit as a rule the symptoms common to hysteria, and will be fully dealt with elsewhere. Dementia præcox may be confused with mania, but patients with the former disorder are usually more childish. The history will assist in arriving at a proper diagnosis in those cases of paranoia which are accompanied by maniacal outbursts.

Prognosis.—The immediate prognosis is good in cases of simple mania, but the ultimate is by no means hopeful, recurrent attacks being common. In acute mania the outlook is fairly good, so long as the general physical condition remains satisfactory: rapid emaciation points to an unfavourable prognosis. Auditory hallucinations are usually of grave import; the same is true of marked degeneracy, indicated by the eating of filth or total disregard of the calls of nature. It is often very difficult to decide in a first attack whether a recurrence is to be anticipated. As a general rule a maniacal outbreak in the early epochs of life indicates that there will be subsequent attacks. This is more likely to be the case if there is definite cause for the illness, or if there is a marked neurotic inheritance. The prognosis is bad in many cases of acute delirious mania, and probably only careful feeding and good nursing will give a patient any chance of recovery.

Pathology and Morbid Anatomy.—The pathology of mania is still somewhat obscure, but excellent work continues to be done, and should be the means of supplying us with more exact knowledge. Delirium is usually caused by infective toxic agents. Micro-organisms have been found in the blood of patients with acute delirious mania, but most of these organisms appear to be the common pathogenic bacteria usually found with suppuration. Bianchi and Piccinino reported that they had found a special bacillus in the blood of persons suffering from acute delirious mania, and on this ground they concluded that there must be a special form of delirium which they named Acute Bacillary Delirium.

Auto-intoxication from the gastro-intestinal canal is a theory

which continues to gain support. Marro has reported several recoveries from the treatment of washing out the stomach of such patients; this is very strong corroborative evidence that at any rate in some cases of maniacal excitement absorption of deleterious matter from the alimentary canal may give rise to mental disorder. The question of altered blood supply to the brain is one that still requires further investigation, but a confident belief may be entertained that it plays no small part in the production of mania. In support of this view the writer has known an attack of acute mania to result from ligature of the internal carotid artery; again, delirium is a common sequel to starvation. In considering the bearing that changes of the blood-pressure may have upon mania, it may be usefully observed that mental disorder associated with aortic disease is almost always maniacal in character. It is interesting, too, to note that even the ordinary physiological fall of blood-pressure, which occurs in the latter part of the day, is accompanied by mild excitement when compared with the mental state of the early morning. In acute delirious mania, and even in other forms of mania, the quantity of blood in the system is found to be greatly decreased, and infusion of a saline solution leads to a rapid and marked improvement in the patient's mental condition. Whether the actual disorder is the result of altered blood-states or not, it is most probable that the *feeling of well-being* so commonly experienced in states of mania is due to altered blood-pressure. The morbid changes which are found in the brains of persons dying from acute mania show, in varying degrees, degeneration of the neuron. It is certain that the nerve-cells ultimately suffer in their entirety, but in all probability the condition is secondary to something else.

Treatment.—Many points regarding the treatment of mania will be found in the special chapter on Treatment; and suggestions will here be limited to those matters which are especially connected with mania. The physician must decide where he considers it best for the patient to reside during his illness. The milder forms of excitement seldom come under treatment, as the symptoms of mania are not usually recognised as such, but are taken rather to indicate good spirits and exuberant health. Still, if a medical attendant see such a patient, he should warn the friends of the risks they are

running in allowing their relative to waste his strength in restless excitement.

If the case is at all acute, it is very difficult to treat it outside an asylum, unless ample means are available. Continual restlessness and loss of control are awkward symptoms to cope with in a private house, and when shouting and singing are superadded, removal to an institution is almost imperative. Wherever the patient is, all unnecessary furniture should be removed ; and a room on the ground floor is preferable to one upstairs. Cases of simple mania do not always call for certification, provided that the patient can be controlled ; but when there is much arrogance and general exaltation, effective management is almost impossible at home. Rest in bed is the most valuable form of treatment, and best tends to promote recovery. Added to this, partial isolation, good and liberal feeding, and attention to the sleep and bowels, are important points in the treatment of mania. Massage is not recommended. Some physicians recommend plenty of exercise for their maniacal patients, believing that physical exhaustion will promote natural sleep. Such a practice is full of danger, and seems to be directly opposed to all experience. To exhaust the body implies an equal exhaustion of the nervous elements ; the greater the fatigue, the wilder the excitement. Strength must be conserved during the early weeks of mania, for in this way the attack is shortened. Further, it must be borne in mind that fatigue is not registered in the maniac as it is in the sane person, and in consequence it is very easy to overtax his strength. Rest engenders rest; the more it is indulged in, the greater is the desire for repose. When the excitement is very intense it is frequently difficult to persuade a patient to keep in bed, but if left he will usually sit covered up in blankets. The bowels must be carefully attended to, and a dose of mineral water or some other purgative may be given with advantage three or four times a week.

Many excited patients are troublesome in taking food ; some are very capricious, and will take one good meal and then refuse the next, but in the end they will average a fair amount of nourishment daily. Others refuse everything that is brought to them, or will only drink a small cupful at a time. A minimum standard must be fixed, and the patient must be forcibly fed if he does not take this allowance. Many of these patients will

swallow only fluid food ; but as this may consist of several pints of milk, four to six eggs, soup, &c., enough nourishment can be taken. Never delay forcible feeding if it is considered necessary, as states of excitement tend to produce exhaustion, which may terminate fatally. All struggling with patients must be avoided as far as possible. Nothing must be undertaken unless sufficient help is at hand to carry it out without injuring the patient if he should offer resistance.

The insomnia of acute mania is most difficult to overcome. Patients will lie awake laughing and talking night after night, in spite of the hypnotics which are given. Chloral, amylene hydrate, and sulphonal are the most useful sedatives in these cases. During the day hyoscin may be given with advantage. In the cases of so-called agitated melancholia, bimeconate of morphia is at times most valuable. It may be given three times a day in doses of half a drachm, or one draught nightly of one drachm. It is needless to say that the patient should never be informed what drug he is taking. Stimulants may be necessary in all the more acute forms of mania, but alcohol should be avoided if possible. In states of exhaustion brandy and champagne should be given freely. The writer finds that if it is possible by any means to raise the blood-pressure of these patients, a distinct lessening of excitement is at once produced. Unfortunately, it is not always easy to bring this about ; the drugs which will be found most useful are acid. hydrobrom. dil. and liq. adrenalin, but the period during which the blood-pressure is raised after administration is usually very short. As a rule better results can be obtained by employing the prolonged bath, the description of which will be found elsewhere. Patients are placed in this bath daily. The duration of the first bath should be half an hour, with a gradual increase from day to day, until a duration of six or eight hours is attained. Often an excited patient will be found to be quiet and rational during the bath and for a short time after. In many ways the use of the bath tends to promote recovery.

In acute delirious mania and other forms of excitement, where there is a tendency to collapse, much can be done towards saving a patient's life by the services of a good, conscientious attendant. From the nursing standpoint these cases resemble those of typhoid, and consequently it is a

matter of the utmost importance to have a thoroughly conscientious and experienced attendant. Food must be administered, if necessary, by means of a nasal or œsophageal tube every four hours, and, as a rule, six ounces of alcohol should be given during each twenty-four hours. In these acute cases it is very necessary to watch carefully for local redness or other signs which may indicate the forming of bed-sores. The passing of urine must be regularly recorded. A temperature chart should be kept, as a sudden accession of fever may be the first warning of some intercurrent disease.

When convalescence has set in, plenty of time must be given for the patient to recover his physical health. The nervous system will require many weeks of rest, and it is very unwise to remove the case from the institution or house in which it has been treated until sleep has fully returned and all the physical functions are re-established. The period of convalescence is frequently very trying, both to the patient and his friends, and unfortunately it is by no means common for the latter to decide upon some rash step, which ultimately ends in disaster. This question is so fully dealt with in the chapter on Treatment that it is unnecessary further to discuss it here.

In conclusion, it should be pointed out that if there is any special cause of the excitement, this must be treated in addition to attending to the various symptoms as they arise. The treatment must be directed towards improving the bodily condition, as well as quietening the mind, and in many ways the former may be said to be the more important of the two. When the patient has recovered, tell him how he must live in the future, so that he may avoid any recurrence of his illness. If he should have a second attack, he and his friends should recognise the symptoms earlier than on the first occasion, and thus reduce the risk of a serious breakdown by taking immediate action. If the patient is suffering from the mixed form of manic-depressive insanity, his relatives must be warned to watch for symptoms of depression. In no case should a patient be allowed to go back to work for some months after his illness, and it should always be remembered that it is the conduct of the treatment during the next few years which will go far towards confirming the nervous system and re-establishing health.

CHAPTER VII

STATES OF DEPRESSION

Formerly all states of depression were included under the generic term Melancholia; any attempts at differentiating various types were chiefly confined to whether the patient was resistive or agitated, or, in other words, whether there was motor restlessness associated with the mental depression. During recent years there has been a growing tendency to differentiate states of depression according to the grouping of the symptoms and the general type of cases. As with other forms of mental disease, a disorder which was at one time considered an undivided whole is now found to be an aggregation of disorders, for the mistake was made of naming the disease according to its most prominent symptom. Now, depression is common to many types of insanity, but to call all these types Melancholia is a misnomer, and tends to confusion. Similarly, the term General Paralysis was used to denote many varieties of disease, but slowly with the advance of knowledge this disease has been isolated from the other disorders which resemble it and which were originally included under the same title.

At the present day the study of mental disease is still in its infancy, and change in nomenclature is to be expected, as from time to time it is found that diseases formerly regarded as distinctive are in reality compound. Many forms of insanity are still necessarily named after their most prominent mental symptom. The student should clearly understand that such terms as Mania and Melancholia merely designate *groups of symptoms*. From a diagnostic point of view, this state of things is unsatisfactory; groups of symptoms are apt to change, and not infrequently the name of the disease, which is really descriptive of the condition of the moment, has to be

altered with the variation in the condition. Thus the melancholiac of to-day may be the maniac of to-morrow and the dement of six months hence. All this is very confusing to the student; but though the advance is slow, progress is taking place, and more accurate diagnosis can be made to-day than was possible some years ago. Differences are more accurately distinguished, and differentiation between types of mental disease is more minute than in the past. Kraepelin has done a very great deal to further more accurate diagnosis and prognosis, correctness in the latter depending largely on accuracy in the former.

States of depression are found associated with many forms of insanity. A layman can diagnose that a man is melancholic, but the physician should try to find out why his patient is depressed. Now, depression may be the whole or paramount condition, or it may merely be a symptom in a grave disease such as general paralysis. It may be a symptom merely indicative of a mental state, or it may be associated with other symptoms which, when taken together, connote progressive mental deterioration. Melancholia has been defined by Mercier as 'a disorder characterised by a feeling of misery, which is in excess of what is justified by the circumstances in which the individual is placed.' This definition, it should be remembered, deals only with the mental state, and in no way explains the origin of the depression.

Ætiology.—Some forms of melancholia occur only in the years of decadence and not before middle life, but the varieties of depression formerly known as Recurrent Melancholia and Folie Circulaire usually show themselves earlier. Depression is rather more common among women than men. An unstable inheritance is found in a fairly large proportion of cases, especially in those in which the break-down occurs early in life. Phthisis is often found in the family history, and, if combined with any neuroses, it increases the liability to insanity in the offspring. Monotonous and anxious occupations are factors which may predispose to depression. Certain types of mental constitution are more liable than others to lead to melancholia. Long-continued periods of insomnia are frequently followed by a depression of a more or less severe kind. Most melancholiacs will tell you that

they seldom drink water, and will also give a long history of severe constipation. Certain periods of life, when stresses are apt to weigh heavily on the organism, must also be classed among the commoner causes of depression; in the female we find the following: pregnancy, lactation, climacteric, and senility. Lastly, there are the so-called mental shocks, such as loss of relatives and financial failure.

Varieties.—There are several recognised forms of mental disorder in which depression is the most marked symptom. Attacks of melancholia may occur periodically throughout the life of some persons, in the same way that others may suffer from cyclic attacks of excitement. Many writers prefer to use the old term 'periodic' or 'recurrent' melancholia for these cases, or, if the mental disorder is an alternation between depression and mania, the term Circular Insanity or Folie Circulaire is employed. Kraepelin has introduced the name Manic-Depressive Insanity for these cases. He considers that disorders of this kind are not accidental in character, but that they are a definite grouping of symptoms which are quite distinguishable from other forms of depression. Kraepelin is undoubtedly a keen observer, and he shows that these recurrent disorders follow a definite course, which is usually repeated in each succeeding attack. He describes three varieties of manic-depressive insanity: the Maniacal, the Depressive, and the Mixed. Older writers would describe these as Recurrent Mania, Recurrent Melancholia, and Folie Circulaire. The time seems scarcely to have come when the student can be taught such refinements as Kraepelin's classification denotes. The writer fully agrees with much that Kraepelin has stated, but the distinction that the latter makes in dividing his cases into groups is almost too fine for teaching purposes.

For the present, melancholia will be described under the following heads:

(1) *Recurrent Simple Melancholia*, a condition in which there are usually no delusions, and in which the physical health is not seriously affected. This disorder usually first appears early in life, and has a tendency to recur periodically, or may alternate with a cycle of excitement. It differs only in degree from the disorder described as Recurrent Melan-

cholia. No doubt in some ways it would be better to include this variety under that heading. Nevertheless, it is well to recognise that clinically the two varieties have points of difference. Patients suffering from the simple form may have repeated attacks, *always* of this *mild* type, but never become weak-minded.

In the more serious variety the melancholia and the alternating mania when it occurs, are of a severe nature, and there is a greater tendency for the patient to pass into dementia.

(2) *Melancholia and Hypochondriacal Melancholia.*—This disorder more commonly occurs after middle life.

(3) *Recurrent Melancholia.*—The writer has had great difficulty to decide what name to give to this subdivision, as it includes not only recurrent cases of melancholia, but the alternating forms of mania and melancholia

Agitated Melancholia is included as a subdivision of melancholia by most writers, but it seems more accurate to treat this disorder as a type of excitement. Depression also occurs in other conditions, and, in fact, may be a symptom in many diseases. It is therefore all the more incumbent on the physician to be careful in his diagnosis. The mental state of a fair proportion of general paralytics is one of depression, but dementia paralytica must not be diagnosed from the mental symptoms alone ; this disease is physical, the mental disorder being secondary. A prudent physician will always seek for physical signs of organic disease before committing himself to a diagnosis.

Prodroma.—Melancholia usually develops slowly, though in its recurrent forms subsequent attacks may be sudden in onset. As a general rule the patient gradually becomes more and more depressed. He may have weeks of sleeplessness, and there is a slow but steady loss of the body weight. He loses interest in his work and surroundings, attention fails, and everything becomes a burden. It is often very difficult to say when the line of demarcation between sanity and insanity has been crossed, as the reasoning power is not lost so early as it is in mania.

Mental Symptoms.—(1) *Recurrent Simple Melancholia.*—In this condition there is merely a general feeling of depression and slowing of mental action. Savage defines the state as

being 'a saturated solution of grief.' These patients are self-absorbed, and there is a rise of subject-consciousness and fall of object-consciousness. They feel a sense of resistance to their environment, and lose interest in all their former pursuits. Thought is difficult, and there is a general sense of inability to do their daily work; thus they become unoccupied. Speech is slow and betrays effort. They become untidy and careless in dress and personal cleanliness, and food is distasteful to them.

These patients must always be treated as potential suicides, but with recurrent simple melancholia it is not common to find serious attempts at self-destruction. Depression is more acute in the early hours of the morning, and often by evening the patient is able to take interest in the affairs of others. Hallucinations and delusions are not present; a patient may have a vague fear that he will be unable to work again. After some weeks or months these cases usually recover, but the tendency is for them to have recurrent attacks of a similar kind.

(2) *Melancholia and Hypochondriacal Melancholia.*—In this disorder all the symptoms mentioned under the head of Simple Melancholia are present, but more marked. There is greater evidence of dissolution, both physically and mentally. The onset is usually slow and steady, with short periods of remission, during which the patient appears brighter and more cheerful. It is largely owing to this gradual onset that so many patients are left untreated, and the condition is not uncommonly chronic before the physician is called in. When the disorder is fully developed there is severe mental depression; there is a very great rise of subject-consciousness, and the patient is more and more introspective. Attention fails for external things, and is centred on subjective thoughts and feelings of a dismal kind. With all this there is a profound loss of interest in environment, and inability to do the daily work. The melancholic mother neglects her house and children, and to her everything seems to be confusion. Self-accusation very soon appears as a prominent symptom, for the tendency of human nature is to explain new feelings and thoughts. It is this tendency to explain and desire to account for everything, that leads to the production of so many delusions.

Symptoms and circumstances are all viewed from the gloomy side, and the patient turns to the 'unknown' for his explanations. To the conscientious person there is no subject so fraught with possibilities for this purpose as religion, as there the melancholiac can find the condemnation which he seeks. As has been already stated in the chapter on Causation of Insanity, religion is far more closely connected with the explanation of unaccustomed symptoms than an actual factor in the production of melancholia. The layman would have us believe that religious excitement is the cause of the mental disorder; in a vast proportion of cases this is not so, the religious element being purely secondary to the insanity. It seems at times almost incredible that the patient really believes all he says, so trivial are the matters upon which his self-accusation is based; but these delusions, it must be remembered, are not founded on past experience, but upon belief. Some persons seem capable of making themselves believe anything; and, once the belief is present, plenty of evidence in support of it is readily forthcoming, no matter how absurd the original idea may be. For the same reason argument is of no avail, since the belief is a faith, and not based on fact or experience. A patient may even go back to his early life in his endeavour to find a cause, and may ultimately accuse himself of having stolen two stamps when he was young, or in his first position of trust. He distorts early indiscretions into gigantic sins, and even the ordinary incidents of life may be misconstrued into vice. Some patients say and believe that they are 'lost' for ever, and that they have committed some 'unpardonable sin;' and when pressed to state what the sin is, cannot do so. They *feel* that they have sinned, and that is sufficient, just as another feels that he is ruined, notwithstanding that he has a large balance at the bank. Fear of being sent to prison is another common delusion. Extreme apprehension of some impending harm fills many melancholiacs with alarm; they misinterpret every sound and action into the movements and preparations of their persecutors. 'The world is changed, and everyone in it,' is the cry of some, failing to realise that the change is in themselves.

Hallucinations and illusions supply much of the necessary

evidence in confirmation of the beliefs. The unpardonable sinner hears 'the voice of God' proclaiming that he is 'lost,' and constantly sees 'devils' around him; he may even go so far as to smell brimstone. The hallucinations which are associated with melancholia frequently reflect the type of the patient's education and training. He believes that he is 'lost,' and at once the hell of his personal creed appears about him.

The melancholiac is, as a rule, able to converse, and will answer questions; but his thoughts keep reverting to the same depressing and gloomy ideas, though with an effort he can direct his attention to other things. Thought is very slow, and a patient will frequently repeat a question put to him in order to gain time. Memory is slow and lacking in receptive power, but is otherwise good. The *conduct* is in keeping with the mental condition. Many of these patients will sit unoccupied for hours, and even days and weeks; others will stand still, looking the picture of abject misery. They lose all interest in dress and personal appearance, and are slovenly in their habits. They neither wash nor clothe themselves unless made to do so by others.

Many of the insane, and especially melancholiacs, are absolutely consistent; if they consider that it is wrong to eat, or wicked to do any particular thing, they will deny themselves, no matter how painful the denial may be. The sane are constantly adapting themselves to altered circumstances, and in this way may be inconsistent; but it is not so with the insane. Suicidal attempts of all kinds are frequent among melancholiacs; some will spend their days scheming how to destroy themselves. In rare instances a melancholiac will kill his own family, and then commit suicide.

Hypochondriacal melancholia is a type of ordinary melancholia, which chiefly differs from the above in that a patient, instead of explaining his symptoms from the mental standpoint, refers all his troubles to some physical disease. These hypochondriacal ideas may develop at any period of life, but are more common in the middle and later epochs. In some cases hypochondriacal melancholia seems to grow out of a natural tendency, though there are many hypochondriacal persons who, in spite of lifelong worry about their health,

never lapse into insanity. There is a difference between the ordinary melancholiac and his hypochondriacal brother, for the former sees no hope before him, and believes that neither God nor man can help him, while the latter is always hoping and expecting to discover some one or something that can cure him. The hypochondriac describes his troubles to everyone; the melancholiac broods over them. Some authorities believe that the hypochondriac is, to a great extent, conscious of the workings of his abdominal organs. It is probably true that certain organic sensations are deeply affected, for we know what an influence abnormal sensations or the absence of normal sensations have on the idea of self.

There are several varieties of hypochondriacal melancholia. (a) *Brain Hypochondriasis.* — These patients frequently believe that their thoughts take shape, and can therefore be read. Such persons usually seek seclusion. Others believe that their brains are diseased and do not work properly. This form of melancholia is most common in middle and later life.

(b) *Sexual Hypochondriasis.*—This is more frequently found in early adult life, and in very neurotic subjects with an unstable inheritance. Sexual excesses are at times the exciting cause, or the reading of quack literature may be the original disturbing element. Ideas of impotency have led to suicide on the eve of marriage, and it is wise to treat all sexual hypochondriacs as suicidal.

(c) *Gastro-Intestinal Hypochondriasis.*—This includes those persons with ideas of throat or bowel obstruction. The former are frequently quite young patients, and believe that their throat is closed up and that they cannot swallow, or that they suffer from cancer of the throat. This condition is also found in middle-aged persons. Refusal of food is usually the most difficult symptom to treat, and may necessitate the early removal of such a patient to an asylum. Ideas of bowel obstruction are fairly common, and have been referred to as the symptom of *true* hypochondriasis. Many of these patients believe that their abdomen is a huge sack, and that food is accumulating there in large quantities. They may tell you that their bowels have not been opened for years, and that they feel that they are becoming more and more distended

every day. They are usually very suicidal and very troublesome in the matter of food, having to be fed by means of a stomach tube. Altered intestinal and abdominal sensations probably account for certain of the symptoms, and it is of interest to note that the lumen of the intestinal tract has been found to be much narrower in patients dying from this condition. There is one other class of intestinal hypochondriasis which has been referred to by Savage, and which is one of medico-legal interest. Certain patients have the belief that they have no control over the lower bowel, and may prepare to relieve themselves in public places without any thought of indecent exposure.

(d) *General Hypochondriasis.*—These patients believe that they have some general disease, such as hydrophobia or syphilis. They may show their mental aberration by constantly washing themselves or the vessels they use for food. They refuse to shake hands, and withdraw themselves from others, lest they should infect them. Disordered conduct often reflects many of the ideas and thoughts of these patients. In all forms of hypochondriacal melancholia, in addition to those named, the ordinary symptoms of melancholia are generally present. Disorders of the emotions and attention, disorders of conduct, and disorders of nutrition, all occur. These symptoms need not be repeated here in detail, as they will be found under the heading of Physical Symptoms in Melancholia. The physician must remember that, though hypochondriasis is usually found in patients in whom no known bodily disease can be diagnosed, it may be associated with organic disease, the hypochondriacal symptoms being in reality the patient's misinterpretation of true physical signs. Thus, in locomotor ataxy a person may misconstrue the gastric and rectal crises into the belief that his stomach and intestines are being tampered with, or that some one is twisting them by means of electricity.

(3) *Recurrent Melancholia.*—Recurrent melancholia is a disorder which usually appears in early adolescence, and formerly was looked upon as ordinary melancholia. In many points it resembles ordinary melancholia, but it differs in that it develops earlier in life, and tends to recur or to alternate with periods of excitement. Further, it is more likely to

terminate in a weak-minded condition. This tendency to dementia is the characteristic of all developmental insanities. The emotional disturbances may be very profound, and as a result delusions of all kinds may develop. The false beliefs may be those of being 'lost,' 'forsaken for ever,' they may take the form of self-accusations, or they may relate to the bodily organs and functions, and be hypochondriacal in character. These delusions may be corroborated and supported by hallucinations and illusions, and in every way the conduct and physical symptoms resemble those observable in ordinary melancholia. These patients may attempt suicide in the early weeks of depression.

Usually within eight or ten months the mental and bodily symptoms disappear, and the depression is followed by a period of apparent health. This may last for some months or even years, when there is a return of all the old symptoms, and they pass through another attack which may resemble the former in almost every particular. On the other hand, there may be only a few weeks of apparent health, and then it is noticed that the patient seems to be almost too bright, with an exaggerated sense of well-being. As time passes definite excitement sets in, with a stage of acute mania, which in turn is followed by a stuporose condition, and then health. Sooner or later mental disorder again appears, and the cycle is gone through once more. The periods of health become less marked, both in length of time and in completeness, and the excitement and depression follow each other more closely.

Physical Symptoms. — *Gastro-Intestinal System.* — The tongue is furred, appetite bad, and there may be absolute refusal of food. Constipation is an almost constant symptom, and at times it is very severe, and requires active treatment.

Circulatory System.—The pulse is slow and high tensioned, the blood-pressure being very high in some cases. In the so-called agitated melancholia (which is classed by the writer among maniacal states) the blood-pressure is low, as in other forms of mania. There may be œdema of the feet and legs due to blood changes, and some patients are anæmic.

Respiratory System.—The breathing is slow, and the movements of the chest are shallow, and on auscultation the respiratory sounds can only be heard with difficulty.

Genito-Urinary System.—The urine is diminished in quantity, and the amount of urea excreted is considerably less than normal. The catamenial periods in the female are either absent or lessened in amount and frequency.

Nervous System.—Neuralgia is not uncommon in the incipient stages of melancholia. In true melancholia, patients frequently complain of a feeling of weight on the top of the head, or a sensation like a tight band tied round the cranium.

Skin and Appendages.—The skin and appendages suffer from nutritional changes. Small pustules may develop; the nails are friable, furrowed, and contain opaque patches; the hair is dry and brittle, and loses its lustre; and there may be areas of pigmentation in the skin. Stoddart found perspiration very defective in melancholic conditions, and even when treated with drugs such as pilocarpine and jaborandi, the reaction, if any, was very slight. This is very striking when compared with mania.

The Muscular System has been carefully investigated by Stoddart, who states that melancholiacs suffer from paralysis and rigidity of the muscles of the spinal column and of the large proximal joints, while the movements of the wrists, fingers, ankles, and toes are comparatively unimpaired. These symptoms are very slight in mild cases, but decidedly marked in the more severe forms of melancholia. Thus the movements in the melancholiac are largely peripheral movements of the fingers and smaller joints, while in larger joints rigidity may be detected. The movements are slow, and the patient states that he has difficulty in doing things.

Some melancholiacs complain that objects look blurred to them; on examination it will be found that it is only near objects that seem to be out of focus, showing that the blurring of objects is due to weakness of accommodation. This may, to a certain extent, explain the frequency with which these patients mistake identity. The *body weight* usually falls rapidly, and at times there may be marked emaciation. *Sleep* is bad in all forms of depression, but the insomnia is more marked in severe cases. There may be difficulty in getting off to sleep, or the patient may wake early, and even the sleep that is obtained is disturbed by disagreeable dreams. Reaction times are all slowed.

Course.—Melancholia may run a long course: some patients apparently recover after many years. Depression occurring in early life usually disappears after six or eight months, but only to recur in a few months or years. The physical health generally improves first, being quickly followed by the mental. Depression which has formerly lasted all day passes off in the afternoon or evening, and becomes less in intensity, as well as in duration, as the weeks and months pass. Sleep improves, and dreams which were originally terrifying and disagreeable become more pleasant. When this takes place the prognosis is nearly always good. The delusions have less influence on the patient, and though he may still believe that they were true, he now regards them as a horrible dream that has passed. As improvement goes on the patient takes more interest in his personal appearance and his surroundings, and females will inquire after their trinkets and dress. As in health so in disease, some days are less pleasant and cheerful than others, and this is very marked in melancholia. Recovery may be sudden and rapid, especially in the recurrent types of this disorder. Such an event is by no means hopeful, as a sudden relapse may as quickly follow. If a patient is not recovering, emaciation may be a prominent symptom, and general nutritional failure may terminate in death or predispose to some intercurrent disease such as phthisis. In those cases which are chronic, the delusions become more systematised, and hallucinations may appear together with signs of general intellectual deterioration, or they may pass into a general condition of apathy.

Diagnosis.—Depression itself is comparatively easy to diagnose: the difficulty arises when it has to be determined whether the patient is certifiably insane. The physician must endeavour to discover the cause of the depression, and whether it is dependent on some organic disease. Never fail to look for symptoms of general paralysis. If the memory is found to be seriously affected, in all probability the condition is due to some progressive disease. Marked melancholia with but little physical change usually points to a chronic state. Weak-mindedness may at times be confused with melancholia, but with the former the body weight is usually satisfactory, and food is taken ravenously. Moreover, the conduct differs in the

two conditions. The melancholiac is unoccupied because he is preoccupied with his own thoughts, but the dement is idle from general apathy and indolence. The recurrent forms of melancholia can be distinguished from the ordinary type of melancholia, as they appear earlier in life, and are of more rapid onset. It is frequently very difficult to distinguish between some of the recurrent forms of melancholia and dementia præcox, but in the latter consciousness is generally clearer. The patient, though apathetic, seems to notice everything that is happening; his delusions, too, are of a different character from those of the melancholiac. Hypochondriasis may be difficult to distinguish from hypochondriacal melancholia; but in the former the patient is more able to direct his attention to his work or occupation, he is more hopeful of his recovery, and he will never tire of trying new remedies.

Prognosis.—The immediate prognosis is fairly good in those cases which break down early in life, though the ultimate prognosis is not good, as these cases usually recur. With care a great deal can be done to prevent a relapse; patients of this type should be taught how to live and the prophylactic measures that they should follow. With each relapse the prognosis becomes less favourable.

In the ordinary melancholia of middle life the prognosis is fair; about twenty-five per cent. recover and keep well, and a further twenty per cent. improve enough to be able to be sent home and may in time be able to do some work. Another fifteen per cent. improve to a certain extent both physically and mentally: former delusions become less marked, but they remain apathetic and are unfit to work, as prolonged intellectual effort brings about a return of the depression. Frequently these persons keep fairly well in an institution where the regular life suits them, and they may even be able to spend several days away with their friends; but if they leave altogether, they relapse within a short time. About thirty-five per cent. remain permanently depressed, and five per cent. die.

Persistent hallucinations of hearing are unfavourable; and in the same way marked deterioration and degradation, evidenced by such acts as the eating of filth and inattention to the calls of nature, are of gloomy portent. If there is great

dissolution, with but slight nutritional change of body, the prognosis is usually not good; but so long as functions such as catamenia are absent, a prospect of improvement may be entertained, provided there are no other symptoms to the contrary. If, on the other hand, all the functions of the body have been re-established, and still there is no mental improvement, an unfavourable prognosis may be expressed, if such has not already been made. The appearance of hair on the face of the female usually is a symptom of bad omen. Also persistent refusal of food for a long period is of grave import. In conclusion, it is never well to give a very favourable prognosis in the case of persons suffering from hypochondriacal melancholia, as many of these patients do not recover.

Pathology and Morbid Anatomy.—At the present time very little is known of the morbid changes which take place in the nervous system of those afflicted with true melancholia. As already observed, depression may be a symptom in many diseases; in each case the changes will depend on whether the disease be organic or otherwise. With the so-called functional conditions it is somewhat difficult to discover what exactly takes place, as death is not common. We know that there are varying degrees of 'chromatolysis' of the cortical nerve cells, as evidenced by the manner in which the cell takes various stains. There may in severe cases be 'achromatolysis.' The nucleus may be displaced, and the dendrons of the cells varicose. In the melancholiac of later life arteriosclerotic changes may be observed.

Several theories have been advanced as to the pathology of melancholia, most authorities agreeing that the condition is probably in a large measure due to nutritional changes. Autointoxication from the alimentary canal is a theory which steadily grows in favour; and, when it is remembered that even temporary constipation will produce a feeling of depression in most persons, this theory must be deemed worthy of consideration. Stoddart considers that in melancholia there is a paralysing product formed within the cortical neurons, and that this accounts for the weakness in the proximal or large joints. The writer believes that altered blood states have much to do with the development of melancholia. In all probability

toxins play an important part in bringing about these changes, and ultimately there is usually a great increase in the general blood-pressure (cf. vaso-motor disturbances in the chapter on General Symptomatology). The raising of the blood-pressure may be due to the vitiated blood irritating the wall of the vessel. Whatever may be the true pathology of melancholia, the increased blood-pressure is a factor which must not be lost sight of, for, if it is not definitely a cause, it certainly largely accounts for the *feeling of* depression.

Treatment.—Many matters regarding the treatment of melancholia will be found in the special chapter on Treatment. Here reference will only be made to those points which are especially connected with melancholia. The onset of this disorder is often very insidious, and the early symptoms are frequently overlooked or misinterpreted. The importance of early treatment cannot be over-estimated, for it not only tends to shorten the course of the disorder, but lessens risk of suicide.

It is frequently a matter of no small difficulty to decide when the limits of sanity have been passed in any given case; but even if this point is one of perplexity, there is no reason why the patient should not be energetically treated at home. Never allow a case of melancholia to drift while you are making up your mind what to do. The friends of the patient will not be idle, for they will almost certainly aggravate all symptoms by continually telling the unfortunate sufferer to rouse himself. If the depression is marked, do not send him away to travel, as is so commonly done by the inexperienced: to do so is to court disaster. Rest is the treatment that is required. The physical health must be attended to; it is bad in most cases, and it is only by improving the bodily condition that it is possible to relieve the mind. If the depression is acute, the patient must be kept in bed for some time, and on no account must any mental work be permitted. The melancholiac is as unfit for work as any one suffering from a serious physical malady. His attention is entirely preoccupied with his own thoughts and feelings, and he fails to grasp business matters or complex details. Even the little events of daily life become exaggerated into insurmountable difficulties. Removal from home is nearly always necessary, for to be in one's ordinary surroundings and at the

same time to feel unequal to the performance of one's customary duties is a constant source of worry, and not infrequently leads to delusions of unworthiness.

Again, the friends are as difficult to manage as the patient. They have an ingrained conviction that depression and all its accompanying symptoms are under the control of the patient, and that he can dismiss them by an effort of the will. The unhappy man is already inclined to blame himself for all his shortcomings, and the view taken by his relatives only confirms his tendency to self-accusation. Suicide must be carefully guarded against, and it must not be forgotten that it is during the early stage of depression that self-destruction is most likely to be attempted. If there is any physical disease to be discovered, this must be treated. The bowels are always constipated: a daily action must be obtained by enemata or aperients. Younger patients do well on mineral waters, but older persons should be given a mixture such as the following: extractum cascaræ sagradæ liquidum half a drachm, and glycerine half a drachm, one teaspoonful dose once or twice a day as required. If this is not sufficient, a soap-and-water enema must be administered twice a week.

Most melancholiacs are very troublesome with their food, and may refuse it altogether. A minimum allowance should be fixed, and if this is not taken, forcible feeding must be resorted to. The body weight must be taken at regular intervals, and if it is found to be falling extra cream and eggs should be added to the dietary. Sleep is always bad: the various methods for relieving this symptom, which are described in the chapter on Sleeplessness, may be tried. Sulphonal is not a good drug for melancholiacs, unless it is possible to keep the bowels freely open. Paraldehyde and amylene hydrate will be found useful, and in some cases a mixture of chloral hydrate and potassium bromide. The daily exercise, if the patient is allowed out of bed, must be limited. Many of these patients stand constantly in one attitude, a habit which gives rise to great œdema of the legs and feet. It may become necessary for such a patient to be kept in bed by a nurse sitting at the bedside.

In the early stages of depression much benefit can be derived from the administration of such drugs as erythrol tetranitrate. The blood-pressure is raised in melancholia,

and by artificially lowering it, many of the most trying subjective symptoms are relieved for the time being, and in some cases permanently. The action of amyl nitrite is good, but its effect is too evanescent; that of erythrol tetranitrate is more lasting. The latter drug should be given in tabloid form half a grain twice a day for the first three days, and then by progressive increases of half a grain every three days, until the dose reaches two or three grains *per diem*. The nurse or patient must be warned against throwing any of the tabloids into the fire or dropping any of them on the floor, as they are explosive when heated or trodden upon. A course of Turkish baths is most beneficial to some melancholiacs, as these help in removing effete matter from the system. Several tumblers of cold or warm water should be taken daily, beginning with one glassful about half an hour before breakfast. Stimulant is not necessary, and should not be given unless symptoms of exhaustion supervene.

As convalescence takes place, the patient should be granted liberty, but it is wise not to under-estimate the risk of suicide. Nevertheless, much harm is often done by keeping a patient constantly under the eye of a nurse, and if trust be put in the parole of a convalescent melancholiac, it will rarely be abused. Get the patient to promise that if he ever has any recurrence of the suicidal thoughts, he will inform his attendant or some other responsible person. When the general health has improved and the body weight increased, then, if all the various functions are fully re-established and sleep has returned, a few weeks or months of travel can be recommended. In no cases, when avoidable, should a patient return to work for several months after his illness. Give him careful directions how he is to live in the future, so that he may avoid recurrences of depression; but impress upon him if he has any threatening of an attack to take advice early, and be treated at once without waiting for the development of more serious symptoms. If the patient is suffering from the mixed form of manic-depressive insanity or so-called circular insanity, the relations must be warned to watch for the appearance of the symptoms of excitement. In conclusion, remember that serious depression is often a preventible condition, and that its early stages usually respond to treatment.

CHAPTER VIII

STUPOR AND CATATONIA

Stupor

Stupor is a state in which the outward signs of mentation are in abeyance. It may develop as a primary disorder, or it may be secondary to some other condition. The terms Primary Dementia and Acute Dementia are used by some writers as synonyms for the form of stupor known as Anergic Stupor. By almost universal custom the word 'dementia' is applied to designate states of permanent weak-mindedness, from whatsoever cause the mental enfeeblement may arise. This being the case, it only leads to unnecessary confusion to make use in any way of the word dementia in connection with curable forms of insanity. On these grounds the terms Primary Dementia or Acute Dementia had better not be employed. Stupor is by no means a common type of insanity, and great care must always be exercised in distinguishing it from other disorders.

Ætiology.—The majority of cases of stupor occur in persons under thirty years of age. It is produced by the same stresses that may be ætiological factors in the production of other types of insanity. In many cases it seems to be closely connected with the reproductive functions. The most potent causes are mental and moral shocks, profound physical fatigue, and sexual excess.

Varieties.—The best clinical classification of stupor is the following: (1) *anergic stupor*; (2) *post-melancholic stupor*, sometimes known by the term *delusional stupor*; (3) *post-maniacal stupor*; (4) *catatonic stupor*. In addition to these, there might be included states of stupor associated with general paralysis or epilepsy; but in these, though the condition

resembles stupor, many of the most characteristic symptoms are absent.

Mental Symptoms.—It will be more convenient to describe the mental symptoms of the different varieties of stupor under one head, merely indicating the points of distinction between them. In some ways it is difficult to distinguish the various types clinically, as the forms may be observed to interchange in the same patient, the anergic stupor of one day becoming the delusional stupor of the next. The mental symptoms are to a great extent negative in character. The patient stands or sits unoccupied, taking no apparent heed of his surroundings. The expression is vacant; the eyes droop or stare; the pupils are widely dilated; saliva dribbles from the mouth. The extremities are cold and blue, and frequently œdematous. Spontaneous movements are absent. No attempt is made to take food, but if it is placed in the patient's mouth he may automatically chew and swallow it. As a general rule there is complete mutism. The calls of nature are not heeded. At night the patient may remain quietly in bed, but sleep is usually very deficient.

There is almost complete amnesia in the anergic form of stupor, so that on recovery the patient remembers little or nothing of his illness. The condition of memory is very different in the post-melancholic or delusional form of stupor, for on recovery the patient usually remembers a good deal of what has taken place. For this reason it is not wise to discuss questions in front of the patient which are not convenient for him to hear. The receptive faculties may be very active, whereas the executive may be faulty or in abeyance. The emotions are equally inhibited: a patient will hear of the death of his dearest relative without exhibiting any concern. Delusions may be present or absent; in the anergic types they usually fail to be elicited, but this failure may be due to loss of memory. In post-melancholic stupor delusions may be an important symptom, and the patient frequently appears to be dominated by some powerful idea, which occupies his whole attention. The sufferer from anergic stupor, though dependent on others to look after him, is unresistive and apathetic. He can be dressed, fed, and attended to without any difficulty.

The antithesis of this is to be found in the melancholic type of stupor, for here the patient is very resistive to everything that is done for him. Stuporose patients are seldom suicidal in the strict sense of the word, but they may commit an impulsive act which may result in injury to themselves or others. For this reason cases of stupor should never be left unattended. For weeks such a patient may sit in the same place without making any voluntary movement, until the nurse begins to look upon him as bereft of mind, and safe to leave unattended for a few minutes: she may return to find that in her absence the patient has smashed the window or set fire to himself. In the post-maniacal type the stupor is not very profound. The condition is more transitory and less severe; in short, the patient is suffering from a stuporose state rather than true stupor. He will react slowly to questions, sometimes repeating them before making a reply. Voluntary movements are performed, but only rarely, and they are made in a manner which denotes fatigue.

Physical Symptoms.—Most of the bodily functions are disorganised. (1) *Gastro-Intestinal.*—The tongue is furred, and the mucous membrane of the mouth is unhealthy. Saliva is not swallowed properly on account of the diminished activity of the pharyngeal reflexes. Food is not taken, and in some cases, notably those of melancholic stupor, all nourishment is refused and strongly resisted. The bowels are constipated, not uncommonly to an extreme extent; the marked decrease in the intestinal secretions being largely responsible for this condition. (2) *Circulatory.*—The pulse is very feeble and infrequent; the extremities are usually cold and cyanosed, and at times œdematous. (3) *Respiratory.*—Breathing is slow and shallow, and auscultation reveals a lessened respiratory murmur. (4) *Genito-Urinary.*—The catamenial periods are absent as a rule. (5) *Skin and Appendages.*—Nutritional changes are observable in the skin; pustules and small abscesses may occur. The hair loses its gloss, and is dry, harsh, and brittle. The nails exhibit opacities and grooves due to trophic changes. The body weight falls steadily during the acute stage of the disease.

The clinical observations made by Stoddart support the classification of stupor as above arranged. Melancholic

stupor, in common with some other forms of melancholia, is characterised by a form of rigidity which mostly affects the muscles of the trunk and the larger joints. In anergic stupor this rigidity is absent, but in some cases the condition known as *flexibilitas cerea* will be found; in this the limbs of the patient can be moulded and moved into different positions, in which they will remain for some period of time. Stoddart has also made careful investigation of the sensations in the different forms of stupor. He finds that there is anæsthesia covering an extensive area of skin in cases of anergic stupor, and that this loss of sensation may persist for several weeks or months. Similarly, in post-maniacal stupor there is commonly some anæsthesia, but it is usually limited to the peripheral ends of limbs, being most marked in the forearms and hands, legs and feet. In these cases the anæsthesia is usually of a transitory nature, and may last only for a few days. Stoddart reports that he rarely finds anæsthesia in melancholic stupor.

Course.—If treatment is begun early, before any serious nutritional changes have taken place, the progress may be towards recovery in a fair percentage of the anergic cases of stupor. The physical condition begins to improve after a few weeks of forced feeding. The various functions slowly become re-established, and the body weight increases. A large number of the patients with post-maniacal stupor get well—stupor is one of the stages on the road to recovery from mania. When a case of stupor is taking an unfavourable course the physical health usually remains in an unsatisfactory condition, and mentally the patient becomes more and more degenerate. The habits may become very degraded, and ultimately a state of profound dementia supervenes.

Diagnosis.—Stupor must be distinguished from conditions such as amentia, secondary dementia, dementia præcox (catatonic form), general paralysis of the insane, and cerebral tumour. The distinction from amentia is made from the history and the state of physical health, which is usually fairly good in imbecility. In secondary dementia there is always the history of an acute attack of insanity, the general nutrition as a rule is good, and the sleep is not bad. In the catatonic form of dementia præcox there are the following

characteristic symptoms: verbigeration, stereotyped movements, and rigidity, and some authorities believe that plasticity of limbs also occurs. General paralysis is diagnosed by the presence of physical signs indicative of the disease. It is always wise to carefully examine all male cases of stupor for symptoms of dementia paralytica, as a small percentage of patients with that disease exhibit this form of mental disorder. Cerebral tumour is diagnosed by the ordinary symptoms, such as headache, optic neuritis, sickness, or some local paralysis.

Prognosis.—As already stated, the prognosis is fairly good in many of the anergic and post-maniacal cases, but the outlook is not so favourable in the melancholic type. When the onset is rapid, and the treatment is begun early, the prognosis is better than when the stupor is of slow development. There is always a danger of these patients developing phthisis, and they may die from this disease.

Pathology and Morbid Anatomy.—Nothing is at present known as to the pathological basis or morbid anatomy of this disorder. Microscopically it is usual to find nerve-cell changes such as chromatolysis and achromatolysis. In some cases a general cerebral œdema has been observed.

Treatment.—The treatment during the early stages of all forms of stupor must be stimulating and supporting. Food must be liberal and of a nourishing nature. Sickness may interfere with the feeding, in which case the milk must be peptonised and given in small quantities very frequently. If nourishment is refused, artificial feeding must be resorted to without delay. Constipation should be relieved and the bowels regulated. Retention of urine may require relief. In some cases massage and passive exercises have proved beneficial; in others cold and tepid shower baths may be used with advantage, but these must not be continued if there is not a good reaction afterwards. Rest in bed is usually necessary, especially in those cases where the circulation is very bad and in which there is swelling of the feet and legs. The nurse should be cautioned against leaving the patient unattended, otherwise an accident may occur as a result of some impulsive act. It is a wise precaution to have the patient's temperature taken night and morning, as fever

may be the first indication of early phthisis. Easterbrook, in his valuable paper on Organo-Therapeutics,[1] reports that good results followed the administration of thyroid gland in several stuporose cases under his care. The experience of the writer does not confirm this further than the fact that a patient with stupor after taking thyroid for a week frequently becomes more active. If thyroid is given, the body weight and general health of the patient must be carefully watched, as serious emaciation may take place.

Catatonia

Catatonia is a disease, or, to speak more accurately, a group of symptoms, which was first observed and described by Kahlbaum in 1874. Kraepelin treats catatonia as a special variety of dementia præcox. The writer has seen several cases of catatonia in persons well past middle age, and for this reason cannot regard it as merely a type of precocious dementia. The bounds of dementia præcox must be defined, otherwise the term is useless, for to say that a patient is suffering from dementia præcox when he is within a few years of senility is clearly a misuse of language. The answer may be that there are two diseases closely resembling each other and yet in reality different; and that one is associated with adolescence, while the other is common to other periods of life. But if this is the case, the disorders appear to be indistinguishable clinically, and must at present be treated as one and the same.

Mental Symptoms.—The disorder not uncommonly begins with a period of depression, lasting from a few days to several weeks. During this time the physical health of the patient fails; he sleeps badly, and is disinclined to take food. Delusions of almost any kind may appear, and sensory disturbances of the nature of hallucinations are at times prominent. Following this depression, there may be a stage of maniacal excitement or agitated melancholia. The patient becomes restless, and is apprehensive of some impending harm. Very soon the condition becomes one of stupor. The patient stands or sits without showing any signs of spontaneous movement.

[1] *Journal of Mental Science*, 1900.

This symptom is spoken of as the symptom of *negativism*. Passive movements are met by a powerful resistance. The patient resists everything that is done for him. If this resistance can be overcome, a limb will frequently remain in the position in which it has been left by the operator. This rigid immobility may be broken from time to time by movements incessantly repeated in an automatic manner, to which symptom the term *stereotyped movements* has been given. The muscles are in a very rigid state, and the patient may assume most uncomfortable positions. The jaws may be tightly clinched, with the head either thrown backwards or drawn forwards. The eyes are either staring, or the eyelids are tightly closed. The body is usually somewhat flexed; the limbs are rigid, with the forearms at right angles to the arm, and the hands clenched. The rigidity is greatest in the large joints. If the patient walks at all, the gait is slow and hesitating.

Mutism is another prominent symptom, but this mutism may be broken by periods during which the person repeats words or phrases in a monotonous or automatic manner (verbigeration). The sounds are not always recognisable words, and occasionally they are inarticulate nonsense. Many of the other symptoms are those common to stupor. The muscular tension is not always marked, and at times the limbs can be easily moved about into any position, in which they remain; the term *flexibilitas cerea* is used to describe this condition. At times the patient will react to questions, usually by a repetition of the words which formed the question (echolalia). Sudden excitement may supervene at any time, and may last for several days or weeks. In addition to the maniacal symptoms, stereotyped movements and verbigeration may be observed.

Physical Symptoms.—The physical state of the patient in many ways closely resembles that already described under Stupor, except for the peculiar muscular rigidity above referred to. Trophic changes take place all over the body. Vaso-motor disturbances are noticeable. The respiration is slow and shallow, and in this way favours the development of phthisis. Food is refused or eaten ravenously; resort to artificial feeding may be necessary. The bowels are

constipated; and there is amenorrhœa in the female. The general health always suffers, and the weight falls. Convulsive seizures have been reported in certain isolated cases.

Course.—The course, in the vast majority of cases, is steadily towards dementia. The stupor alternating with attacks of excitement may last for several years. When the patient becomes definitely weak-minded, the physical health not uncommonly improves and the body weight increases. Food is taken freely, but the patient remains careless in his dress, and may be degraded in his habits. Catatonic dementia is characterised by stereotyped movements and verbigeration. In a small percentage of cases the symptoms clear up and the patient recovers; but even in such an event the illness usually leaves its mark upon the intellectual faculties, and there is an obvious degradation from the previous mental level.

Prognosis.—The prognosis is usually unfavourable, but in a small percentage of cases recovery takes place. Catatonic patients seem especially liable to develop phthisis, a fact probably due to the shallowness of the respiratory movements.

Pathology and Morbid Anatomy.—Nothing is known as to the pathological changes which produce this disease.

Treatment.—The treatment is practically the same as that of stupor.

CHAPTER IX

CHRONIC DELUSIONAL INSANITY (PARANOIA)

Some doubt has been felt by the writer as to the most suitable title to this chapter. In some ways Paranoia is the better term, but unhappily the word has been used by various authors to denote widely different diseases, and in consequence much confusion has resulted. Percy Smith took Paranoia as the subject for his presidential address [1] before the annual meeting of the Medico-Psychological Association in July 1904, and made an exhaustive review of the disorder. After reciting the various views on paranoia held by English and Continental writers, he said: 'I think I have said enough to show that there is no common agreement as to the connotation of "paranoia" even in the country of its origin, that by some authors groups of cases are included under this term which others hold to be entirely outside it, and that the doctrine of primary intellectual disorder, apart from the element of feeling or "affect," has of late received rude shocks, and that it is tottering to its fall. I have always taught students that in examining any case of mental disorder it is entirely erroneous to omit to examine all the functions of mind, feeling, knowing, and willing, that the mind is not divided into water-tight compartments, and that in taking the history of any case it is most important not to accept without close inquiry the account given by relatives of the mode of onset and order of appearance of symptoms. In my opinion the separation of primary affective from primary intellectual disorders is purely artificial, and just as in mania and melancholia the affective state is not the sole factor, so in paranoia the affective side cannot be ignored.' He sums up his views as follows:

[1] Presidential Address, *The Journal of Mental Science*, October 1904.

'1. The term "paranoia" is useful if it be limited to cases of chronic delusional insanity in which there are organised and systematised delusions, whether of persecution or exaltation, and whether these run separately, concurrently, or by transformation from persecution to exaltation, and whether the disorder originates in childhood and youth (originäre paranoia) or later in life (tardive paranoia), and whether associated with heredity or not.

'2. In all these cases the importance of the affective element of mind must not be ignored, and it is erroneous to use the term "paranoia" as implying primary intellectual disorder to the exclusion of, or prior to, disorder of "Affect."

'3. Allowing that there are acute cases in which delusions appear to be organised and systematised, and yet in which recovery appears to take place, many of these are merely the initial phase of chronic delusional insanity with a remission of symptoms.

'4. If the incubus of the idea of primary intellectual disorder be got rid of, there is no difficulty in recognising that some cases of paranoia may begin with an acute functional mental disorder of the nature of melancholia or mania (as is indeed recognised even by those who take the primary intellectual view), or even may follow a delirious or confusional state.

'5. With this exception, acute confusional insanity (acute Verwirrtheit) and acute delirious states (acute delirium, collapse delirium, Erschöpfungsdelirium) should be regarded ætiologically and clinically, and from the point of view of diagnosis and prognosis, as entirely apart from paranoia or chronic delusional insanity.

'6. Mercier's term "fixed delusion" should be used for states secondary to acute forms of insanity, where the persisting delusions are not organised or progressively systematised.

'7. With regard to terminal dementia in paranoia, it is trying to prove too much to say, as some authorities do, that dementia does not even supervene in this condition; and I think that Kraepelin's action in removing a large group of cases in which terminal weak-mindedness occurs from the domain of paranoia to that of dementia præcox is open to

question. There seems to me a possibility that dementia præcox, with its hebephrenic, catatonic, and paranoid forms, may become the new universal disease (Universalkrankheit) into which large numbers of cases may be thrown, and which will give rise at no distant date to as much discussion as has attended paranoia.'

The opinion held by Percy Smith, and so clearly formulated in the above paragraphs, is no doubt similar to that entertained on this subject by the majority of English physicians. The writer agrees with almost all that Percy Smith has stated; the only point that he would contest is that in which 'the doctrine of primary intellectual disorder' is condemned. Few persons would disagree with him when he states that 'it is erroneous to use the word Paranoia as implying primary intellectual disorder to the exclusion of, or prior to, disorder of "affect."' But granted that it is impossible to get a disorder of emotion without some disorder of ideation, or a disturbance of intellect without some accompanying disturbance of the 'affections,' surely it may be possible or even probable that some disorders may begin with a primary intellectual disorder in which the accompanying emotional disturbances are so slight as to be almost unrecognisable for a time. In the same way some patients with depression may have so slight a correlative intellectual change that even the keenest observer fails to detect it. No doubt the changes are present, but in such an unequal proportion that clinically the one may be considered as primary to the other. The whole course of the disease bears this out.

Further, although our knowledge of the localisation of the various functions of the brain is very elementary, yet on *à priori* grounds it is probable that the emotions proceed from an area different from those devoted to memory or ideation. The stability of one portion of the brain may be greater than another, and consequently one may be affected before the other. The association-fibres are less stable than the projection fibres, and the former frequently show degeneration when little change can be detected in the latter. The writer fully agrees with Percy Smith when he states that 'in taking the history of any case it is most im-

portant not to accept without close inquiry the account given by relatives of the mode of onset and order of appearance of symptoms.' Much may be learned from a correct history, and it is often an invaluable aid to accurate prognosis. For example, those mental disorders which exhibit early intellectual changes with little emotional disturbance are less likely to recover than the early and marked disorders in which the intellectual powers are but slightly deranged.

The cardinal feature of this disorder is the tendency to fixed systematised delusions. Delusions occur in most forms of mental disorder, but frequently they are an outcome of the insanity, and constantly alter with the changes in the various phases through which the malady may pass. In these cases the delusions are the explanation the patient gives of his altered feelings and thoughts. In paranoia it is different. Through many months and years the delusions are being slowly woven and systematised; the mental change is so insidious that the patient's friends look on and scarcely heed what is taking place. Nevertheless, during the whole time the individual has been learning to accommodate his life to the new conditions. Thus in chronic delusional insanity the delusions form the very essence of the mental disorder. It is for this reason that such great difficulty is sometimes found in certifying these patients in spite of feeling strongly convinced that they are insane. With care the paranoiac can retain his freedom for a long time; he has no severe emotional disturbances such as are seen in mania or melancholia, and frequently slight vagaries of conduct are all that can be detected. He is cautious in conversation and will fence with questions, for he usually treats everyone with suspicion.

To return. Older authors were wont to use the term Monomania to designate this malady. There were three main varieties: (1) *monomania of grandeur*; (2) *monomania of suspicion*; (3) and *monomania of unseen agency* (electricity, hypnotism, &c.). These terms have been disused for some time, as they were inaccurate. Clinically it is very rare to find true monomania, whereas it is common to find several delusions. The patient who believes himself to be an emperor not uncommonly has delusions of persecution and

unseen agency as well. As has been already observed, the emotions are not severely disordered; such disturbances as occur are merely in keeping with the delusions. The judgment, however, may be seriously impaired by the delusions. The principal characteristic of chronic delusional insanity is the gradual systematisation of the delusions over a long period, until ultimately they become fixed.

Ætiology.—Chronic delusional insanity is rather more commonly found in men than in women; it is an insanity of adult life. Most patients have an insane inheritance. Precocious evolution may terminate in paranoia: many who suffer from this disorder have been wastrels in their early adult life. Sexual perversions and excesses are found in a fair proportion of cases. The solitary schoolboy is the potential paranoiac; he avoids the society of his fellows, and slowly weaves the theory that they do not care to associate with him. He fosters these ideas, until all his actions and thoughts are coloured by them.

Chronic delusional insanity may appear to be the outcome of a highly egotistical mental constitution, though in all probability the egotism is in reality symptomatic from the first. Conceit may be carried to such an extent as to become pathological. A solitary life is also very prone to produce delusional states.

Varieties.—Many attempts have been made to classify paranoia. None are quite satisfactory, as they either include other forms of mental disorder or fail to embrace cases that clearly ought to be included. Ziehen suggested that the cases might be divided into two large groups, according to the predominance either of the delusions or hallucinations: (1) *Paranoia simplex acuta*, and *Paranoia simplex chronica*; (2) *Paranoia hallucinatoria acuta*, and *Paranoia hallucinatoria chronica*. This classification is unnecessarily complex, the presence of hallucinations being in almost every case merely a question of time, and there seems to be no need for any distinction between acute and chronic. Krafft-Ebing has a somewhat better arrangement. He divides paranoiacs into—(1) those who developed symptoms in early childhood or before puberty, and (2) those who acquired paranoia between the periods of puberty and old age. Amadei and

Tonnini separated paranoia into two great classes, viz.: (1) *Degenerative*; (2) *Psycho-Neurotic*. With the former there is always an insane inheritance. The degenerative class is subdivided into—(*a*) cases in which there is an early exhibition of abnormal symptoms; (*b*) cases in which there is a gradual development of mental disorder. In the case of psycho-neurotic paranoia, the original development is slow, but a more rapid course is afterwards run than is the case in the degenerative class; furthermore, psycho-neurotic paranoia may end in recovery.

Mental Symptoms.—The first stage of this form of mental disorder may extend over many years, and has been called the prodromal or incubation period. All symptoms are very indefinite. The sufferer may often be thought to be morbidly shy or suspicious by nature, but no one would suggest that he is insane. Solitude is sought, through the patient's belief that others shun his society or make him an object of ridicule. In a short time, as the disease further develops, the stage which has been called by Falret and Ritti the 'period of insane misinterpretation' is reached. The patient now explains everything that takes place. Ideas of persecution begin to formulate, but otherwise delusions remain vague and indefinite. He becomes more and more introspective, and shows a marked tendency to misinterpret all his sensations. He becomes increasingly suspicious, and, if he sees a group of persons in conversation, will imagine that he is the topic of that conversation. A chance cough may be construed into an insult. The movements of others are clothed with some hidden meaning. He mistrusts his relatives, and believes that they are in league with others to annoy him. In the streets every person seems to look at him, to know him, and to be passing remarks about him. He sees signs and hints everywhere. He reads sneers and scorn in every face. He notes everything, and nothing seems too trivial for his attention. He may suspect that poison is being put in his food, and carefully examine it for signs of treachery. His judgment on some points is so biassed, that he will in explanation prefer the far-fetched to the obvious, if only it supports his beliefs.

The actions of such a person are often more instructive

than his conversation, from which as a rule but little can be gleaned. It is in actions that a suspicious person shows his suspicion. He will only take food prepared by himself; the manner of his replies to questions rather than their substance will indicate his state of mind; he will prefer solitude to the company of others. Sometimes a patient will resign an appointment or give up an old-established business, and try to start in some place where he feels that he is not known. He will, however, never settle down for long, for soon he finds fresh proof that his enemies have traced his whereabouts and are conspiring against him. In this way a person may move his abode many times a year. Suicide may be sought as a means of escape from all the annoyances. Sometimes resentment may lead to retaliation, when blows may be struck or greater violence be done.

The progress of the mental disorder may stop altogether at this stage, but more commonly hallucinations and various sensory disorders appear and lend further support to the slowly organising delusions. Where formerly he saw a group of persons and felt convinced that he was the topic of their conversation, he now definitely hears their insults. At first he probably will only catch names and abusive terms used, but later he may hear long sentences. Usually there are disorders of all the special senses; but hallucinations and illusions of hearing and sight are the most frequent. The patient sees the poison that is put into his food; he smells the foul gases that are forced through the walls of his apartment; he hears the hum of the electric apparatus and feels the shocks. A common belief held by patients of this class is that others can read their thoughts, which either 'take shape' or are 'echoed loudly.' Patients with these ideas will usually shun society. The advance of science makes it increasingly difficult to disabuse a patient's mind of beliefs of this kind; he will argue that just as the Marconi apparatus transmits and receives vibrations of the æther, so it is possible for his nervous system to do the same. Similarly, to an objection that others do not hear all the voices and sounds, he will retort that every brain is not tuned alike for the reception of vibration. A common form of delusion is that some one is tampering with his genital organs. Female patients often

make charges that they have been outraged. Hallucinations of smell are said by some authorities to be frequently associated with delusions of a sexual nature.

The paranoiac is often wonderfully ingenious in the way that he explains his symptoms and the various phenomena which he believes to be the product of unseen agencies. He will concoct extraordinary theories, and describe in detail the complicated apparatus by which these deeds of villainy are done; and he does not hesitate to ascribe to his persecutors almost superhuman powers of invention. No idea seems to him to be absurd, however fantastic it may be; all his thoughts and energies are directed towards collecting evidence in support of his beliefs. About this time he usually comes to some conclusion as to who are his persecutors. Religious sects, such as the Jesuits and Roman Catholics, are frequently suspected; Freemasons or the Government among others are denounced as the originators of the annoyance. At times a particular person may be named as the arch-conspirator, and where this occurs, there is an element of danger of retaliatory violence. The measures taken by a patient to rid himself of his persecutors depend largely on his own mental constitution. He may fly from them, commit suicide, resort to violence, seek protection from the police, or take civil action in the courts.

Sometimes a patient will seek audience from the King or Prime Minister, in order to recount his troubles and gain some redress from his persecutors. The emotional state is frequently one of indifference, and the sufferer in spite of his troubles does not always become depressed. Outbursts of excitement are not uncommon in young paranoiacs. The memory is usually good, and on some points excellent; but with the passage of time and the constant direction of attention to the particular subjects of delusion, it is found to become somewhat defective. It is interesting to note how a patient will recall incidents of long ago, and read into them quite a new construction. He will see evidences of persecution in the former behaviour of his colleagues. He will tell you that he now quite understands what was meant by this or that event, though at the time he was foolish enough not to see it in its true light.

The patient with chronic delusional insanity is, as a general rule, perfectly capable of advising others, and often for a long time the reasoning power is quite good for subjects which do not affect him. The delusions may be of such a limited nature that they scarcely interfere with the performance of ordinary business duties, though this is by no means common; and, further, a man with delusional insanity may have a 'disposing mind' and be capable of making a will. It is the nature and the class of the delusions that decide the question of capability to transact business.

As has been pointed out, delusions of persecution may persist throughout life, or they may become replaced or associated with delusions of grandeur. The man who believes that when he goes into the streets he is at once the object of interest to every passer-by, and that all men seem to know about his thoughts and business, may ultimately conclude that he is in reality some great personage. He may say to himself, 'Why does the world at large take such a great interest in me?' 'Why do the Jesuits seek my life?' 'Why do the police watch me wherever I go? It surely must mean that I am a prince or king.' Hallucinations may tell him that he is of royal blood. Some patients will tell you that they have heard God's voice saying that they are prophets, and must save the world. They usually look upon any persecutions that they may have to suffer as the natural outcome of their great position, and fully expect to find the world at enmity with them.

Not uncommonly, patients of this class take precautions against apprehended violence. The writer has known cases in which armour has been worn under the clothing for protection.

An exalted person conducts himself as he considers his station warrants. Some patients refuse to dress or undress themselves, and will treat their fellow-patients in a haughty and overbearing manner. They consider it incumbent on them to find fault with and swear at the attendant. They will tell you that the newspapers constantly refer to them, and that the Court and Parliament are interested in them. Some of these persons are intensely jealous; there may also be a strong element of eroticism in their condition. A proud

paranoiac may offer his hand in marriage to some actress or public personage, and if he receives a rebuff, he may shoot either the lady in question or anyone he supposes to be her lover. It should never be forgotten that it is the sufferer from delusional insanity who above all others is likely to commit acts of violence. He is cunning and scheming, capable both of devising a plan and choosing the best moment for its effective execution.

When the delusions have become organised, it is nearly always necessary for a person to be confined in an asylum, if he has not been certified as insane long before. Individuals in this state are constantly interfering with society, and are often a source of danger to themselves or others. Patients with a disposition to litigation may get into the hands of solicitors of doubtful honesty, with the result that their property is squandered in useless litigation, which no honest adviser would have permitted. Many instances of the kind have been seen in our courts of justice; public time is wasted, and the means which should have maintained the patient in comfort pass into the pocket of an unscrupulous attorney. Undoubtedly the paranoiac is not always an easy person to diagnose as insane; but it is extraordinary how slow the lay mind is in detecting mental disorder of this type. In consequence the patient is often far more wronged by those who seek or purport to befriend him than by any petty grievances or insults which are alleged, even upon the assumption that these were true. Most commonly they are so transparently frivolous and so unsupported by evidence that the most average intelligence should perceive that they are the product of a disordered brain.

There is another medico-legal aspect to these cases. Many of the younger paranoiacs are sexual perverts, and they are constantly placing themselves within the reach of the law by committing some criminal act. Some of these patients may experience a change of personality. For example, a man may ape the female both as regards manners and dress. Others will seek friends only among members of their own sex, and homo-sexual tendencies may ultimately result. Social rank is of no consequence with them; they will associate with men far inferior to them in station. These persons are

frequently highly imaginative, and may spend much of their time writing poetry. They are inclined to be religiose and emotional, and at times effeminate. They are very unreliable, and many are totally incapable of earning a living, the concentration of attention necessary for work being interfered with by flights of imagination. Some will do needlework or engage themselves upon other forms of occupation usually done by women. Homo-sexual tendencies often take a long time to develop, as most persons will at first fight against the impulses, and even if they are established, careful and judicious treatment may greatly help the patient.

Again, the paranoiac is deficient in control, and is therefore readily influenced. He may be highly æsthetic in his tastes, but he lacks ballast, and frequently becomes the dupe of unprincipled persons. He may become wildly extravagant. For example, a well-known paranoiac built a luxurious castle, and then spent most of his time in a small boat on a lake in the castle grounds. This boat was drawn by two swans, and the patient called himself Lohengrin. Spiritualism and other occult sciences are subjects which greatly appeal to the chronic delusional patient. They attract his imaginative temperament, and appeal to him as the true explanation of the extraordinary phenomena of his life. The sense of mystery is often well developed, and may become the most powerful factor in the lives of these patients. Reference has already been made to the tendency of delusional patients to imagine that everything that happens about them has a special reference to themselves. Sometimes this belief is carried very far. For example, the wearing of certain coloured ties will indicate definite meanings. This form of mental disorder has been called Symbolising Insanity, but it is merely a symptom commonly met with in chronic delusional insanity.

Before passing on to the physical symptoms of paranoia, it will be convenient to mention here a condition known as *Folie à deux*, or *communicated insanity*. This form of mental disorder is found in other varieties of insanity, but is most frequently met with in association with chronic delusional insanity, and is therefore referred to here. Contact insanity is exceedingly rare, and is a negligible quantity in

the treatment of the insane. It is an almost universal rule that persons who become insane in consequence of association with the insane are neurotic or of very unstable inheritance. Insanity of this kind probably never occurs in institutions for the treatment of mental disease, but as a rule in a private house, where two or three neurotic individuals are living together. The physicians and nurses in constant attendance on the insane do not develop mental disease more frequently than those whose work is the care of patients suffering from physical disease, and in most cases there is a definite cause for the break-down. By the term *Folie à deux* is meant that an insane person has communicated to a sane person living with him a neurotic disorder similar to his own. Great care must be taken not to draw a mistaken inference from the development of insanity by two neurotic persons at the same time, and to attribute the insanity of the one to the morbid effects of association with the other.

That a man believes the statements of his insane relative to be true does not constitute insanity; but if he not only believes them, but acts upon the belief and regulates his life and conduct accordingly, then he too must be adjudged to be of unsound mind. Many persons will readily believe the statements of others, however wildly extravagant they may be; but they will not, so long as sanity is maintained, compromise themselves by acting upon them. These considerations may have a very important medico-legal aspect. Persons may thus be able to bring corroborative evidence in support of accusations either against themselves or others. Savage reports that in a police district in London he was told by the divisional surgeon that a whole family supported the insane statements of the father, the members of this family being themselves weak-minded and influenced by his delusions. Delusions of persecution are the most common delusions that are met with in this type of mental disorder.

Physical Symptoms.—The physical health, at first, does not always suffer to any marked degree in chronic delusional conditions. After a time, owing to deficient sleep, the patient may show signs of loss in weight and other symptoms of disordered nutrition. Some patients, who believe that they are tampered with at night, will keep themselves awake;

others have disturbed sleep owing to sensory disturbances, which are misinterpreted into electric shocks. A patient may starve himself rather than take food that he believes has been drugged. From such causes the health may suffer, and the various systems of the body become disordered. On the other hand, some patients from the beginning lose weight rapidly, and frequently become very anæmic. In the female the catamenia may be irregular both in quantity and periodicity. Sexual malpractices in both sexes may lead to muscular tremor and other fatigue symptoms. In some delusional cases the health is excellent.

Course.—The disease is of such slow development that it may not be recognised for some years. It runs a chronic course, but from time to time there may be outbursts of excitement. The delusions slowly become systematised and organised, and after many years they generally become less intense. The progress of the disease may stop at any stage ; some persons always believe themselves to be persecuted, while others pass from persecution to exaltation. Usually as the disease advances the attention becomes more and more absorbed in the new ideas. Those patients who have an insane inheritance, and who showed symptoms of mental disorder early in life, as a rule finally become weak-minded ; but the chronic delusional insanity of middle life does not tend rapidly to dementia, and even when it occurs the mental weakness is not always very marked.

Diagnosis.—The diagnosis in the early stages may not be easy. It is often very difficult to distinguish between insanity and eccentricity. As has been already pointed out, the disorder sometimes seems to develop out of a morbid mental constitution, and it is then very difficult to draw the line of demarcation that separates sanity from insanity. The characteristic symptom of the condition is the growth of delusions which slowly become systematised. The absence of strong emotional states also helps in forming a right diagnosis. Further, the memory does not fail to any marked extent for many years, and there is not severe mental deterioration, except in those forms of paranoia beginning early in life. Kraepelin includes the latter under the heading of Dementia Præcox, and speaks of them as the paranoid forms of

dementia præcox. He distinguishes between the latter and paranoia, stating that in the paranoid forms of dementia præcox the delusions are of more rapid development and lack system, that they are accompanied by greater emotional disturbance, and that they tend to dementia, while in paranoia proper there is no such marked tendency. Delusional insanity in its later stages may be confused with general paralysis. The casual observer is apt always to diagnose general paralysis when the mental aspect is one of extreme exaltation. The paranoiac may have very expansive ideas, and an accurate diagnosis can only be made by the presence or absence of physical signs of organic disease. Great reliance must be placed on the history, for paranoia is a slowly progressive disease, in which the delusions are more and more systematised as time passes.

Prognosis.—The prognosis is decidedly bad. Patients may improve and be able to be discharged from care, but as a rule there is an early relapse. Most paranoiacs become hopelessly insane, and unfit to be at large. This disorder does not tend to shorten life, and many of these patients live to old age.

Pathology and Morbid Anatomy.—There is very little known as to the pathology of this condition, but probably in a certain number of the cases there is some disorder of general or special sensations. As before observed, altered sensation leads to an altered idea of self. In other cases there seems to be morbid development from childhood. The hyper-sensitiveness which is born in them, brings about their downfall. They see insults where none were intended, and view the world with suspicion. Thus delusional states may be due either to failure of evolution or to dissolution ; with the former, attributes, which ought to have been acquired, are not acquired, or the nervous elements are in some way defective, whereas with dissolution the mental disorder is occasioned by disturbances of functions which were originally properly performed. Anything which may lead to an altered idea of self or part of self may give rise to delusions. Berkeley states that in paranoiacs he has found malposition of the convolutions of the cerebral cortex.

Treatment.—There is but little special treatment for this disorder. Early diagnosis is a matter of great importance, for in

a certain number of cases change of scene and occupation, and careful supervision wisely exercised, may arrest or greatly retard the development of delusions. This is one of the few forms of insanity that can be treated in their early stages by travelling, but if the delusions are at all marked, foreign travel is contra-indicated. Home is always the worst place for the chronic delusional patient, as he quickly suspects the actions and intentions of his friends. There may be some difficulty in obtaining certificates of mental unsoundness in these cases. The visit of a medical man serves to put the patient on his guard. Often several visits are necessary before sufficient evidence of insanity can be obtained. The conduct is usually at first more erratic than the conversation, and the former can be controlled at will. The dangers of homicide or suicide must never be lost sight of, insane persons of this class being quite the most dangerous in these respects. For this reason early discharge from an asylum, on apparent recovery, is not advised; detention during several weeks of convalescence is more prudent. If there is any known physical basis for the mental disorder, this should be treated; but in the absence of this, the methods adopted must be on the lines laid down in the chapter on Treatment.

CHAPTER X

DEMENTIA PRÆCOX

The term Dementia Præcox has been a topic for discussion both in this country and abroad for the past few years. It is somewhat doubtful who originally introduced the term, but it is Kraepelin who has invested it with special interest. He does not seem to claim that he has discovered a new or distinct disease; his aim appears rather to be directed to grouping together diseases which tend to early dementia. Followers of Kraepelin, however, have gone further, and have endowed the title dementia præcox with greater meaning. There is no doubt that the introduction of this term has already done much good in enforcing upon physicians the duty of diagnosis. The study of mental diseases is still in its infancy, and the tendency in the past has been to lay too much stress on symptoms. In this respect the investigation of mental disease does not differ from the early study of disease in general. As knowledge progresses, it becomes possible to divide disease into groups, and by experience to allocate particular disorders to particular divisions or sub-divisions of disease.

There is safety in generalisation, which is to some extent excusable in the early days of knowledge. An instance of this cautious attitude is to be found in the use of the term 'chronic' by many authorities. To say that a disease is chronic when it has lasted for a long time does not require great enlightenment. A layman can *ex post facto* say that a disease is chronic in the sense that it has lasted over a period of time. The physician should be able to detect chronicity, in the sense that the disease is destined to extend over a long time, at its first onset. Some diseases are chronic from their beginning, and educated discernment makes a diagnosis of chronicity possible. It seems that Kraepelin, in using such

terms as dementia præcox, invites the physician to make a diagnosis, and not to postpone prophecy until after the event.

The error into which his followers are apt to fall is that of casting several varieties of mental disorder into one class, bearing the not too illuminating title 'incurable disease.' It is, as it were, instituting a new classification, that of naming the disorders by their ultimate termination. Many persons consider that the present use of the term dementia præcox is too wide, as including in its limits diseases which would be better classed under other heads. It has, however, this advantage, that it is a step towards making our diagnosis more correct, or even towards inducing diagnosis at all; for to state that a person is suffering from dementia præcox connotes an expression of opinion from the first that he is suffering from a chronic malady. The critic may dispute the conclusion, and object that a sufferer from this disease may recover. To some extent his criticism is just, as in some cases there is such apparent recovery as permits of discharge from care. The word 'recovery' must, however, be used in conjunction with the word 'apparent.' There is no recovery in an unqualified sense. Sooner or later there will be a relapse, and the end will be dementia. No physician would say that general paralysis is a curable disease, and yet the general paralytic frequently leaves an asylum in a state of remission so complete that his friends consider he has quite recovered.

The cautious physician may prefer not to look too far ahead, and to him dementia præcox is an objectionable term. But if a man of experience has the courage of his convictions, and realises that his patient is suffering from a disorder which slowly and surely will tend to dementia, notwithstanding that the progress of the disease may be broken from time to time by periods of apparent health, the term dementia præcox is full of meaning; and if he discharges his patient at any time, he treats him as relieved and not recovered. On the other hand, the term may be reserved for those cases of progressive dementia occurring in adolescence which do not enjoy any remission and whose course is one of steady mental deterioration. Nevertheless, in some ways the term dementia præcox is a bad one, and its application to certain conditions will have to be recognised, although there may be modifica-

tions of the view as to what conditions may properly be comprehended within it.

Ætiology.—Defective heredity is found in a very large proportion of these cases; and this is to be expected, for dementia præcox is an insanity occurring in early life. Broadly speaking, persons suffering from mental disorder at puberty or adolescence usually have a neuropathic inheritance, and, further, the tendency of the malady is towards dementia. It may occur in either sex, and in any rank of life. Masturbation has been held to be an important factor in the production of the disease, but this is probably not the case; onanism is rather a symptom than a cause. Some of these patients may never have exhibited any real intellectual brightness, but may have always been dull and reserved; others may have been exceptionally brilliant.

Varieties.—There are three main groups of cases usually described under the head of dementia præcox: (a) *Hebephrenia*; (b) *Catatonia*; (c) *Dementia Paranoides*. Though these are the common types described by Kraepelin, from time to time mixed varieties may be found. For example, a patient may exhibit the hebephrenic form, and later develop the symptoms of dementia paranoides. The writer would prefer to reserve the term dementia præcox for the hebephrenic form, as there is difficulty in distinguishing the catatonic and paranoid cases from catatonic stupor and paranoia occurring at other periods of life. There is not the slightest doubt that catatonia does develop in persons who have passed the age of fifty, and it is a misnomer, if not an error in diagnosis, to classify them as suffering from dementia præcox. Nevertheless at the present time it is more convenient to describe the disorder as arranged by Kraepelin, provided that the above observations are borne in mind.

Mental Symptoms.—There are certain mental characteristics to be found in all the types of this disorder. Consciousness is usually clear. The patient as a rule realises his relationship to others, and orientation is fairly correct. In the paranoid form delusions may lead to misinterpretation and errors in deciding the identity of those persons with whom the patient is thrown into contact. General apathy and loss of interest are early symptoms. The patient loses

affection for his relatives; he is indifferent to pleasure and pain alike. The æsthetic sentiments are lost, and he is careless of his personal appearance. His general conduct is that of indifference, and he seldom exhibits any voluntary activity. He sits about unoccupied, and everything seems too much trouble; he will neither wash nor dress himself. An exception must be made in the matter of food, for many of these patients eat well. The attention is impaired early; the absence of all concentration in the way of active attention is often a very prominent symptom. The condition of memory is also very characteristic. There is usually some amnesia, but even in the advanced forms of the disease the loss of memory is not very profound, though the power of storing fresh impressions may be very limited. The memory often fails to register with the onset of the disease, but the impressions of early life remain to a great extent unaffected. Thus the disorders of memory are more the result of failure of evolution than dissolution. The patient is childish and silly in his remarks, and his powers of reasoning and judgment are very defective. Delusions usually appear during the early stages of the disease, but as time passes they become less marked, and the patient finally ceases to base his conduct and life upon them as he was formerly wont to do. Hallucinations, more especially auditory and visual, are commonly present, but, like delusions, they disappear or become less vivid as the disorder progresses.

(a) *Hebephrenic Form.*—The initial stage of this form of dementia præcox is frequently overlooked. The changes in the patient's character and general temperament are so slow and insidious, that at first they are disregarded or explained away. The active child may become indifferent and wayward; the frank and ingenuous, sullen and reserved. In other words, all that went to make the character is lost, and in its place there are idleness and irritability. As weeks and months pass the changes become more marked, indolence develops into profound idleness, and the patient will lie in bed all day, if not disturbed, and will make no attempt to work. Out of doors, patients of this type are apt to wander on until they lose themselves, and they are careless of all traffic, and heedless of any impending dangers. Their conversation is in

jerky sentences, and only consists of replies to questions put to them. Attention steadily fails, and concentrated thought is impossible. These patients will frequently repeat the question before answering it (echolalia). Sexual malpractices may be also an important and trying symptom in the earlier stages of the disease. Obscene language and the writing of indecent letters are common features of the disorder. Females are usually worse during the catamenial periods.

The mental attitude of the patient may be either one of depression or excitement, but as a rule the initial phases are marked by melancholia and ideas of unworthiness. Delusions of any kind may develop, and frequently they are based upon religious belief. If exaltation and excitement supervene, the type of the delusions changes. Sexual ideas may play a prominent part, and lead to the making of false charges. Hallucinations may appear; the patient may see visions or hear voices; he may taste poison in his food, or smell foul gases. The responsibility for instigating these annoyances is fixed upon some person or persons, and efforts at retaliation may be made. Sometimes suicide will be attempted, the reasons attributed for the act being, as a rule, very childish. The conduct generally is foolish, and no effort towards occupation is made. Carelessness and untidiness in dress are characteristic symptoms. Eccentricities and mannerisms in speech and actions may be prominent.

(b) *Catatonic Form.*—This type of dementia præcox may develop in an insidious manner. There may be several weeks of a general feeling of malaise. The patient has difficulty in concentrating his attention; he becomes sleepless and mildly depressed. As time passes the symptoms become more exaggerated, and his fears take a more active form. Delusions of unworthiness and impending harm disturb him by night and by day. Hallucinations of sight and of hearing, and less frequently of taste and smell, begin to annoy him. He becomes more and more irritable and depressed. He loses all interest in his surroundings, and his whole thoughts are centred round himself and his misfortunes. Mutism may be a prominent symptom, but it is broken from time to time by the monotonous repeating of words and phrases (verbigeration). The patient may steadily pass into

a condition of catatonic stupor, fully described elsewhere. On the other hand, in the place of stupor there may be catatonic excitement. The characteristics of the catatonic state are negativism (resistance to passive movements), fixed attitudes, grimacing, stereotyped movements, and verbigeration.

(c) *Paranoid Form.*—This variety is especially characterised by the presence of delusions and hallucinations, and by a tendency to progressive mental deterioration. Delusions are commonly present in the other types of dementia præcox, but they tend to disappear as the mental enfeeblement supervenes. These paranoid forms have been divided into two main groups according to the coherency of the delusions, the presence of emotional excitement, the rapidity with which dementia comes on, and the persistence of the delusions; but this seems too great a refinement, and in the present description all cases will be grouped in one class. The prodromal stage may be long or short. Commonly there is a period of insomnia, and general failure of attention. In the course of time strange delusions are expressed. The patient fears that some conspiracy is being formed against him. He imagines that he is jeered at in the streets, and that everyone makes fun of him; in short, that he is constantly being annoyed and persecuted in numerous little ways. The sufferer may give up his occupations through some quarrel with his employer or colleagues. Delusions of grandeur may develop, and exist side by side with the ideas of persecution. The patient may be exalted as to his rank or financial position: he may believe that his mission is to reclaim the world. Some of these patients write countless letters, and fill quires of paper with their delusions. They are proud of their position, and are constantly talking of what they have to do. In this they differ from patients suffering from systematised delusional insanity, for the latter are usually suspicious and reticent. The patient with dementia præcox realises, at any rate for some considerable time, that to the world at large his ideas do seem extravagant, but he puts it down to ignorance on the part of the public. He is pleased to discuss his beliefs, and makes strenuous efforts to prove them. Hallucinations, almost always of hearing, are often prominent. Outbursts of impulsive excitement of very short duration may occur. The conduct is usually in keeping with

the delusions; at first these patients are frequently well-behaved, and only as consciousness becomes more clouded does their behaviour begin to be erratic.

Physical Symptoms.—The physical health suffers to a greater extent in the hebephrenic and catatonic forms than it does in the paranoid varieties. In some cases the bodily disturbances are very slight indeed, and except for a loss of body weight and some constipation, no symptoms are to be remarked. In other cases the functional derangements may be very marked, and include disturbances of all the systems of the body. After some months or years the functions may re-establish themselves, and from this time onwards there is a tendency for the patient to become unduly stout.

Course.—The course of the disease is progressive, in that the patient slowly but steadily becomes more and more weak-minded. In a certain percentage of cases the progress of the malady seems to undergo arrest, and the patient may remain for some years in a partially demented condition. In all the varieties of dementia præcox consciousness becomes more clouded with the passage of time. Memory does not always suffer to a very marked degree, but as the power of forming associations fails and the faculty of attention disappears, the memory, of necessity, becomes more defective. Nevertheless the more remote memory may suffer but little. Environment is of small consequence to these patients in the later stages of the disease, as they usually settle down anywhere with surprising contentment. All power of comparison is lost, and their fate is accepted without complaint. Their only want is a plentiful supply of food.

(a) *Hebephrenic Form.*—The rapidity with which dementia supervenes varies in these cases from about eight months to several years. In a small proportion the weak-mindedness never becomes very profound, and in some instances it may be possible for the patient to return home, provided his financial position is such that he can be well looked after. There is, however, always a risk that he may fall into the hands of some unscrupulous person, who will take advantage of his childishness. Throughout the course of the disease the patient is liable to periods of excitement and great impulsiveness, during which acts of violence, against himself or others,

may be perpetrated. Hallucinations usually become less vivid or disappear, and the early delusions may be lost, or at any rate are no longer the active principles upon which the patient bases his conduct. A certain number of cases develop some exaltation, but rarely of an extreme kind. The majority become useless members of society, and merely live a vegetative existence. Some can be trained to do simple work, such as carrying and cleaning, and in this way may become valuable additions to an asylum community.

(b) *Catatonic Form.*—In this variety the progress towards dementia is a fairly rapid one, but it may be broken from time to time by short remissions of apparent health. The symptoms during the earlier stages alternate between stupor and excitement. The stuporose patient will suddenly become wildly excited and extremely restless. He may throw himself about and be generally destructive. His habits become dirty. His speech is incoherent with a great tendency to verbigeration; his movements are stereotyped and stilted. The excitement will disappear almost as suddenly as it developed, and again the patient becomes silent and stuporose. As in the hebephrenic variety, the dementia may vary in severity.

(c) *Paranoid Form.*—This type runs a very slow but progressive course. The delusions as a rule gradually change from being persecutory in character to those of general exaltation and grandeur, the latter in turn becoming less marked as the mental faculties fail. These patients are usually untidy, and occupy themselves less and less. When the original delusions are referred to, they deny any present existence of the beliefs, or state that some one else has usurped their authority. They never show any hostility when the dementia is to any extent developed, and they remain placidly indolent throughout the rest of their life.

Diagnosis.—The disease begins during early life, from puberty to about twenty-five years of age. The period of incubation is frequently a long one, and this early stage may be overlooked. It is distinguished from imbecility by the history, for in the latter the patient will have been mentally weak for several years, while in the former the child develops more or less normally up to puberty or later, when signs of intellectual deterioration begin to declare themselves. When the mental

failure is steadily progressive and forms the chief feature of the disease, the diagnosis is comparatively easy. When excitement or depression is the prominent symptom, it is necessary to distinguish it from the manic-depressive form of insanity. The early development of hallucinations points to dementia præcox. Verbigeration and stereotyped movements and rigidity all favour dementia præcox. The physician must bear in mind the possibility of juvenile general paralysis, but in the latter disease there is usually not only a history of syphilis in one or both parents, but congenital syphilitic phenomena are to be observed in the patient. Further, the presence or absence of physical signs of general paralysis will assist in the diagnosis.

The differential diagnosis between the paranoid form of dementia præcox and systematised delusional insanity or paranoia may appear somewhat difficult. Nevertheless the diseases are in reality very different when carefully studied. Systematised delusional insanity begins in a different way; there is no marked change in the patient's emotional state, and his manner is one of suspicion; his delusions slowly become more organised and elaborated. The true paranoiac never becomes profoundly weak-minded; in fact, the chief reason that his intellect fails at all is that, owing to his delusions, he becomes mono-ideational, as his thoughts are concentrated in one groove. The picture of the patient with dementia præcox is very different, for his delusions show no great cohesion. The emotions are commonly disturbed by excitement and depression. There is no difficulty in persuading him to talk, and he will readily expound all his beliefs.

Prognosis.—The prognosis is decidedly bad, the only question being as to the extent to which the dementia will develop. In some cases there will be a remission, but in time this is followed by another attack, during which the disease will further progress.

Pathology and Morbid Anatomy.—The condition is a very obscure one, and at present nothing is actually known as to its pathological basis. It may be that certain organisms begin to decay as soon as they reach maturity. It has been suggested that the disease is produced by auto-intoxication,

but this seems a very improbable cause. In those cases in which death occurs after many years of dementia, the usual degenerative changes in the brain which are characteristic of that condition will be found.

Treatment.—The important point is to make an early diagnosis, as in many cases it is possible to delay the progress of the disease by careful treatment. Removal from home is usually advisable. Correct bad habits and make the patient lead a very regular life. Some patients, of the simple hebephrenic variety, may remain at home for several years with absolute safety, provided that they are in a position to have some one to look after them. The treatment is largely that of dealing with symptoms as they arise, and improving the general physical health of the patient.

CHAPTER XI

SECONDARY DEMENTIA AND ORGANIC DEMENTIA

Secondary Dementia

The term Dementia is used to indicate a state of mental enfeeblement, the result of disease or decay of the nervous elements of the brain. It is a state produced by dissolution, and always denotes a former state of higher intelligence. Idiocy and imbecility are conditions of amentia due to failure of evolution, but in dementia there has been some amount of mental development which has become degraded. Dementia may be regarded as the final mental state of all men, provided they live long enough. Senility implies a diminished capacity for thought and general slowing of all the intellectual faculties. In some men the physical powers decay first, in others the mental. Now, that which is the natural concomitant of old age may be produced by disease. Some authorities use the term Dementia merely to denote a mental state, no matter whether it be temporary or permanent. This general and wide use of the word makes it very confusing for the student, and in many ways reduces its clinical value. For example, acute primary dementia is a synonym for anergic stupor, which is a recoverable condition. The writer prefers to reserve Dementia to designate those mental disorders in which there is permanent weak-mindedness. The word 'dement' is very generally used in asylums to denote patients whose characteristic feature is weak-mindedness, irrespective of the original mental disorder of which it is the final stage. So many forms of insanity tend to dementia that it is more scientific to look upon this state as the last mental phase of these different disorders, and clearly it is wrong to describe it as a distinct malady.

But there is another aspect from which to view this subject,

for, although it is true that dementia is merely the terminal stage in many types of insanity, it is an important stage, in that it lasts throughout the remaining years of the patient's life. On these grounds this condition calls for special description; and the reader, understanding that no new malady is being described, will recognise the advantage of devoting a few pages to a brief record of the special symptoms connected with this state. In former chapters the student has been taught to look upon mania and melancholia as merely groups of symptoms: the same teaching will hold good here. In order to emphasise more clearly that this state has been preceded by some other type of mental disorder, the prefix 'secondary' is usually employed. Thus Secondary Dementia is a state of mental enfeeblement which may occur as a late stage in many forms of insanity, and is marked by definite symptoms below described. The characteristic features of the original disorder may persist, and in this way colour the dementia. The degree of weak-mindedness may vary greatly, from a state of general inattention and loss of power of concentrated thought to a condition of profound degradation.

Ætiology.—Secondary dementia may supervene upon many forms of insanity, but it is more common to find it in its advanced type, as the final stage of those mental disorders which developed during early adult life. A neuropathic inheritance is usually traceable. Epilepsy and alcoholism are especially prone to produce it.

Mental Symptoms.—The mental symptoms vary according to the degree of weak-mindedness. Control is lessened, and impulsive actions are frequent. Generally, patients of this type are irritable and impatient, and will quickly fly into a passion, but can with tact be as rapidly coaxed into good humour again. The conduct is defective, and the man is no longer capable of adapting himself to ever-changing circumstances. The demented person may fall into the ways of an institution, where life is regular, and in this narrow groove he may even become a useful member of the asylum community. Such a patient may be capable of doing good manual work when once he has been taught it. He works in an automatic manner, and never asks for a holiday, but toils on more like a machine than a human being. In the

more advanced forms of dementia the patient is totally incapable of work; if he employs himself at all, it is rather in some destructive than constructive occupation.

The feelings and emotions are always affected, and the altruistic sense is to a great extent lost. A demented person is indifferent to the welfare or happiness of his relatives, and will hear of the death of a near connection without evincing the slightest sign of regret. Some dements are liable to outbursts of maniacal excitement. The æsthetic sentiment is to a great extent lost or strangely perverted. They are frequently untidy and difficult to keep clean. Some of these patients will decorate themselves with ribbon and coloured garlands until their appearance is grotesque. Those who belong to the lower planes of mental weakness are usually hopelessly degraded in their actions and conversation. They will eat filth from the waste-bowl, and conduct themselves in an utterly degenerate manner. They seem more anæsthetic to pain than the normal person, and seldom complain. The memory is always affected to a greater or less extent. The capacity of storing fresh impressions is partially or totally lost. Some dements may exhibit an extraordinary power of hypermnesia in a certain direction, such as dates, but it is always accompanied by a corresponding failure in the general faculty of recall.

The dement is usually quite unfit to administer his affairs, for he may readily become the dupe of any unprincipled person; still, in the less severe forms of dementia he may be capable of making a reasonable will. It is unnecessary here to discuss this question, further than to state that whenever a physician is called in to inquire into the testamentary capacity of a person suffering from dementia, he should conduct his investigation with great care and circumspection, as *à priori* the patient is not of a disposing mind. Suicidal attempts are decidedly rare, but impulsive violence of a homicidal nature is more common. The dement is usually incapable of devising an elaborate scheme of violence against another, and whatever he does is done on the impulse of the moment. Hallucinations may have persisted throughout the illness, and remain during the final phase of dementia; but as a general rule they are less heeded, and fail to influence the conduct in the same way as during the earlier stages of the

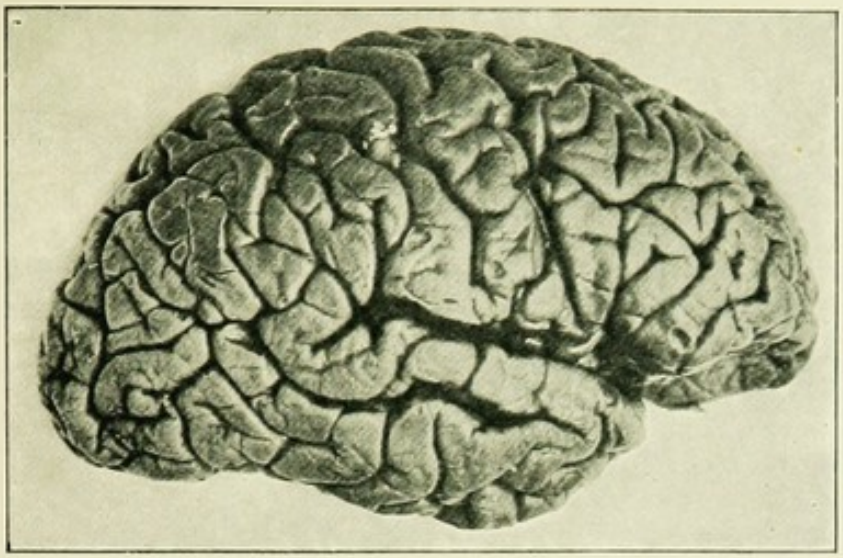
PLATE I.

1.—Outer surface of the right hemisphere of the brain of a female aged 56 years. Previous attack five years before admission into the asylum. Died fifteen days after admission. No dementia. Weight after stripping, 495 grammes. Except for a small patch of old-standing sclerosis in the middle of the ascending parietal gyrus, there is little or nothing to indicate that the brain is not perfectly normal.

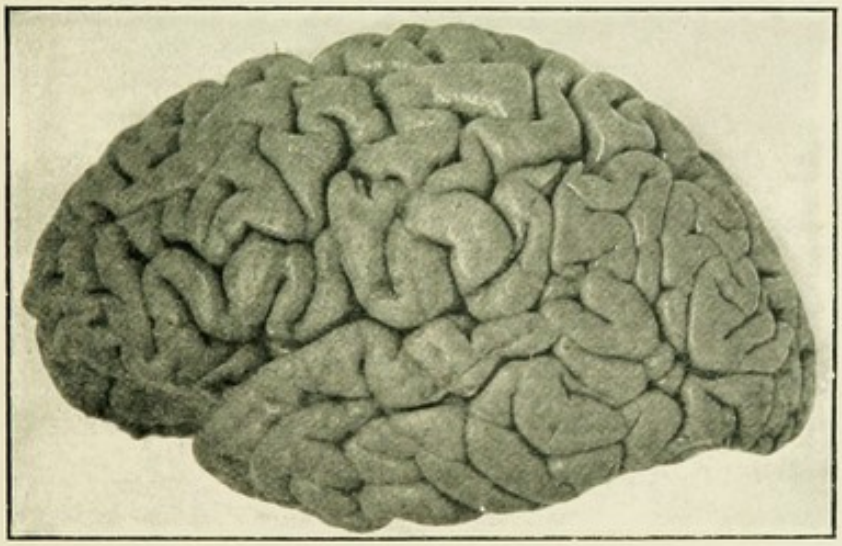
2.—Outer surface of the left hemisphere of the brain of a female aged 36 years. Symptoms for nine years. A gross lesion of the right hemisphere, with resulting epileptiform convulsions, was present. The patient was an unstable case with little or no dementia. Weight after stripping, 488 grammes. Except for a little rounding off of the convolutions of the frontal lobe, the parietal lobules, and the first temporal gyrus, the hemisphere would readily pass for normal.

3.—Outer surface of the right hemisphere of the brain of a female aged 59 years. Symptoms for about eleven years. At first the patient showed a certain amount of mental confusion, and at the time of her death she was in a condition of chronic mania with dementia. Weight after stripping, 515 grammes. This hemisphere differs from those in the two previous figures in showing definite wasting, with marked rounding off of the convolutions in the frontal lobe, the parietal lobules, and the first temporal gyrus. Near the mid-line (not seen in the figure) the pre-frontal region is more wasted than the remainder, but elsewhere no differentiation of the wasting is visible.

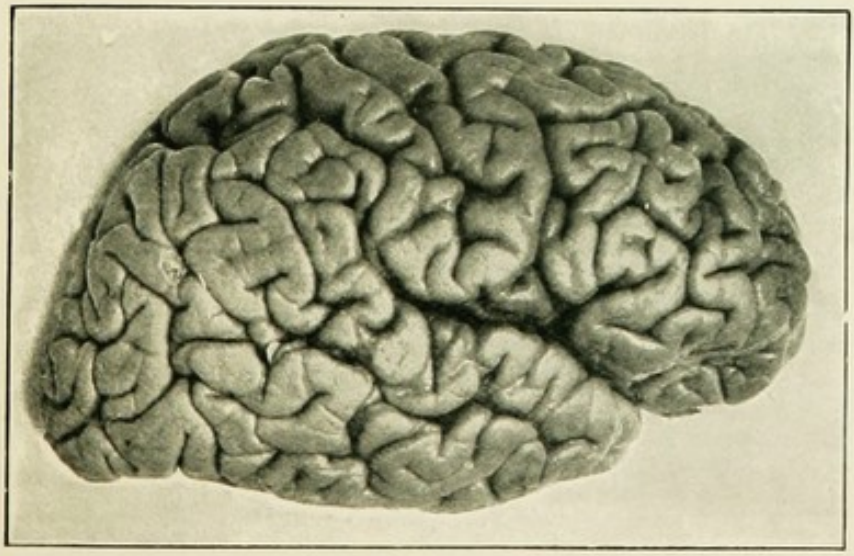
PLATE I.



1.

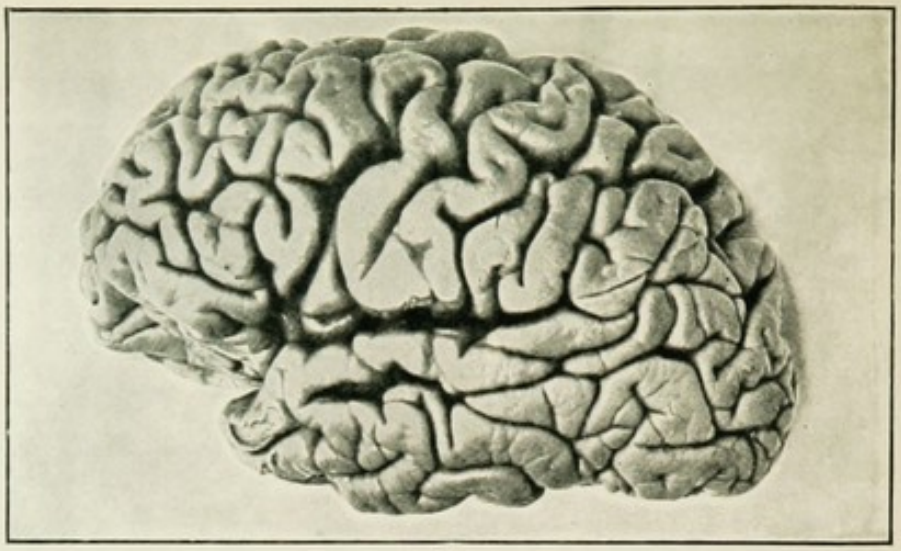


2.

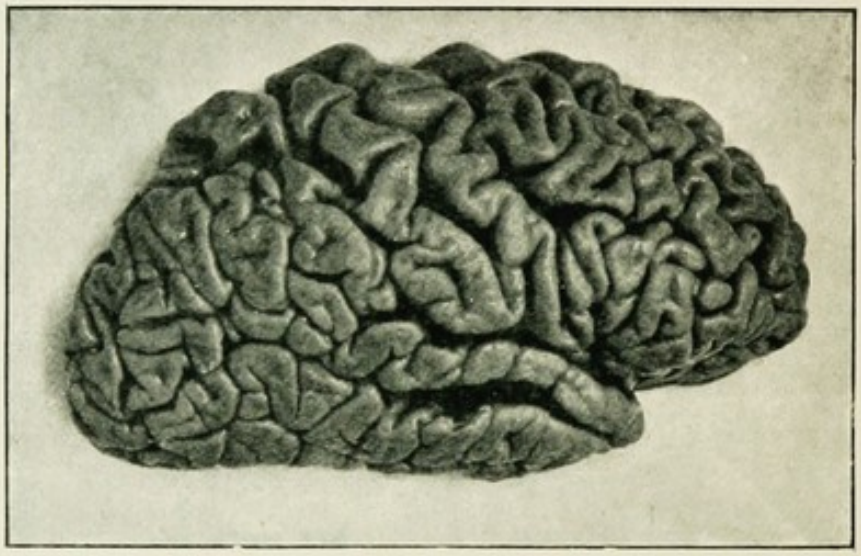


3.

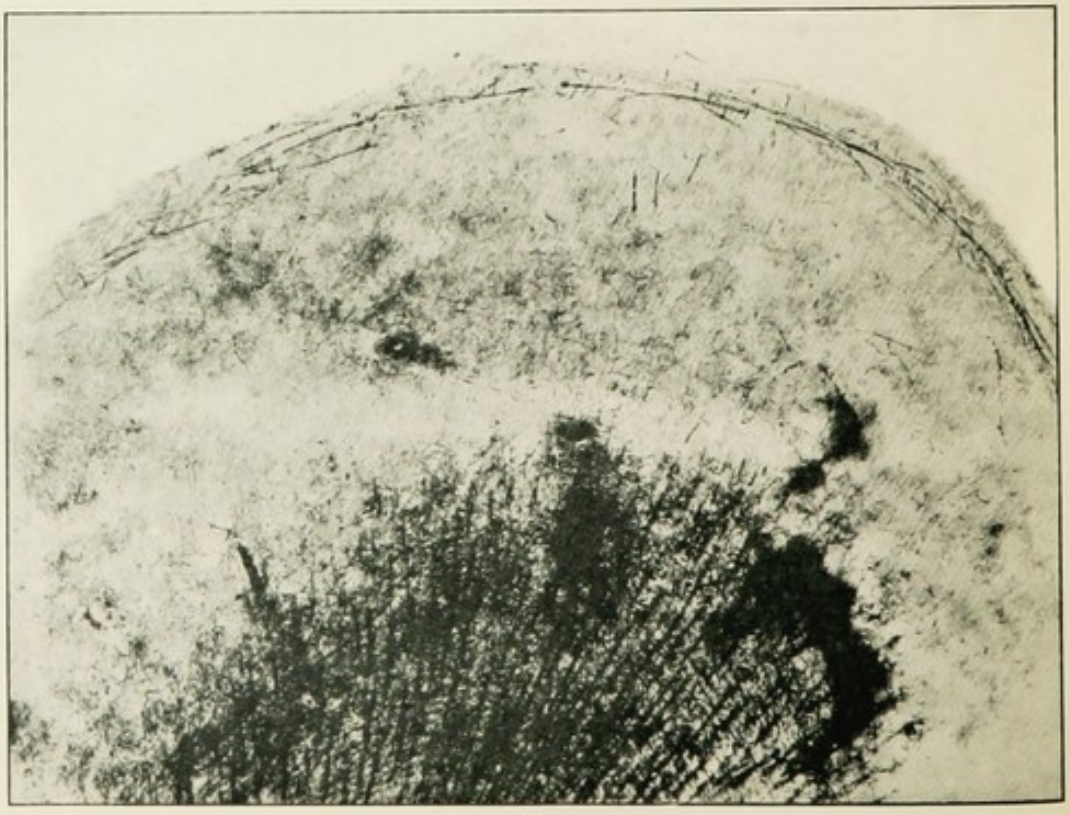
PLATE II.



1.



2.



3.

PLATE II.

1.—Outer surface of the left hemisphere of the brain of a female aged 53. Previous attack at the age of 48, with probably no real recovery. A marked case of dementia; weight after stripping, 445 grammes. The hemisphere shows wasting, which is extreme in the pre-frontal region, considerable in the sensori-motor area and the first temporal gyrus, fairly marked in the parietal lobules, and less marked elsewhere.

2.—Outer surface of the right hemisphere of the brain of a female aged 53. Seven years in an asylum. Died in a condition of gross dementia. Weight after stripping, 355 grammes. The hemisphere shows wasting, which is very extreme in the pre-frontal region, extreme in the posterior thirds of the first and second frontal convolutions and Broca's gyrus, marked in the ascending frontal gyrus, almost as marked in the first temporal gyrus and the superior and inferior parietal lobules, and moderate elsewhere.

Above figures together with those of Plate I. are reproduced from Dr. J. S. Bolton's paper on 'The Histological Basis of Amentia and Dementia,' *Archive of Neurology*, vol. ii.

3.—Section of cerebral cortex stained by Kultschitzky-Wolters method. Showing foci of vascularity and chrome deposit. The medullated fibres only moderately diseased. Compare with normal medullated fibres, Plate XXI.

Photomicrograph originally published by Dr. E. Goodall in *Brain*, vol. xxiii., to illustrate paper on 'Condition of Medullated Fibres in Insanity.'

disease. Other mental symptoms may be present, such as verbigeration, stereotyped movements, &c., but they are more closely connected with the original mental disorder of which dementia is the termination.

Physical Symptoms.—In many cases the general health improves when the patient becomes weak-minded. During the early stages of illness nutrition may have been bad, and symptoms such as anorexia and insomnia may have further undermined the strength, but as mental enfeeblement appears, the appetite usually improves, and there is greater inclination to sleep. As time passes the body weight increases, and the various functions are normally performed. There are many exceptions to this rule, more especially in those cases where the excitement and restlessness persist. Some dements remain in a feeble state of health. Their circulation is weak, and the extremities are cold. The appetite may be voracious, but nutrition is perverted and the body weight is low. Some of these patients will swallow stones, hair, nails, and other rubbish. The habits may be degraded, and there may be total inattention to the calls of nature. The attitude and expression of demented persons are characteristic. The physiognomy is degenerate and coarse, and the gait slow and slouching. Dements seldom write letters, but, if they do, the handwriting will fail to exhibit its former character. All the fine muscular adjustments are lost, and movements are carried out in a clumsy manner. In brief, the patient is degenerate mentally and physically; he looks degraded; his thoughts and actions are on a lower plane than formerly; his appetites are perverted; his sensation is benumbed; the lower instincts run riot, being no longer controlled by the higher faculties. Once a man, he is now an intellectual and moral wreck.

Morbid Anatomy Changes.—Morbid conditions are found in the membranes and all the various tissues of the brain. The calvarium is thickened and more dense in character. The dura-mater and pia-arachnoid are thicker, and the latter is more opaque. There is an increase of the cerebro-spinal fluid. The cerebral vessels exhibit hyaline-fibroid degeneration. The nerve-cells are fewer in number, and show degenerative changes.

Treatment.—With careful supervision and attention many

of these patients greatly improve. The bodily health must be attended to, and the bowels require an aperient at regular intervals. If the appetite is excessive the meals must be supervised. The bowels may become very loaded, and sickness may result. As a precaution it is wise to administer an aperient once or twice a week. Regular exercise must be insisted upon; bathing and dressing should take place under the eye of a nurse. Bad habits must be corrected, as far as possible, and every endeavour should be made to teach the patient some useful occupation. In the milder forms of dementia it fully repays a nurse or attendant to take the trouble to teach the patient some employment. In the big asylums the laundry and workshops are largely staffed by demented persons, many of whom are found to be capable of doing good work.

Organic Dementia

Organic dementia is a condition of mental weakness, the result of some gross disease of the brain. The cerebral lesion may be either diffuse or localised, and the extent of the intellectual deterioration largely depends on the position of the lesion. The mental enfeeblement is merely a symptom in the disease, and is usually later in developing than the motor disturbances. In the diffuse cases, especially in chronic diffuse encephalitis with areas of diffuse sclerosis, there is a progressive mental deterioration with failure of memory. Speech defects may also be noticeable. These patients are usually very irritable and intolerant of interference, and from time to time there may be outbursts of maniacal excitement of a very unreasoning nature. Convulsive attacks are common, and they may be followed by a temporary increase of difficulty in speech. The pulse is frequent and low-tensioned, and many of these cases die from exhaustion. The localised lesions consist chiefly of tumours, hæmorrhages, embolisms, thromboses, and abscesses. The later stages of all these conditions are almost always marked by some intellectual change, but at times the mental disturbance may be an early and important symptom. With slowly growing tumours the most common symptoms are an increasing lethargy, somnolence, and a general dulling of mentation. In con-

versation the patient is slow in replying to questions, and his speech is uncertain and muffled. He fails to take any interest in his surroundings, and seldom expresses his wants.

If, on the other hand, the condition is an acute one, or there is some sudden alteration in the intracranial pressure, more urgent mental symptoms may arise. The patient may become delirious and restless, and this condition is accompanied by visual or other hallucinations. Mental symptoms usually appear earlier with lesions of the frontal lobes than when the tumour is situated in other parts of the brain. But it must be borne in mind that a growth in the frontal lobes may exist without giving rise to any morbid psychic phenomena. Attempts have been made to localise the lesion by the character of the mental change; but the results have not been satisfactory, the intellectual disturbances being by no means constant, in different cases, with tumours in a similar locality. The rate of growth is a factor of no little importance; a rapidly growing tumour will give rise to many more mental symptoms than one of slow growth. Again, severe headache may cause insomnia, and in an unstable person this may lead to mental disorder. If the statistics of these organic cases are examined, it will be seen that a very large proportion of the patients have a neuropathic inheritance, and are therefore predisposed to mental disturbance.

Progressive loss of memory is perhaps the mental symptom most commonly met with in organic lesions of the brain. In some cases the amnesia is very great, and renders the patient totally unable to look after himself. He may offend against public decency, not through conscious transgression, but through failure to realise his whereabouts, or through a momentary heedlessness of his surroundings. Many patients with organic dementia mistake the identity of those about them. As the disease runs its course they become more and more confused, and finally become bedridden and hopelessly demented. Cerebral hæmorrhage may, at the time that it occurs, produce mental confusion. The memory may be greatly affected. A lady who was at Bethlem Hospital had several slight hæmorrhages, and on each occasion her memory for the last fifteen or twenty years was lost. After she regained consciousness she described events of years before as if they

had just happened. In other cases there may be a severe emotional disturbance either of excitement or depression. Again, patients who have had a cerebral hæmorrhage may have periodic attacks of mania or melancholia throughout the rest of their life. This is more common in persons whose mental stability is bad. To sum up: anything which injures the brain, or by compression interferes with its functions, may give rise to mental disorder. The normally neurotic person is more liable to such intellectual disturbances than the truly stable, but the latter will also suffer if the lesion is severe.

Physical Symptoms.—The physical symptoms are very largely those which are produced by the lesion, and it is unnecessary to discuss them here. Other symptoms may occur which result from the altered mental state, but they are similar to those which are found in other forms of dementia.

Diagnosis.—The diagnosis can only be made from the physical signs. The mental disturbance may be the first symptom which attracts attention, and patients may be sent to an asylum without the true cause of the illness being recognised. Some cases may be mistaken for hysteria or general paralysis of the insane.

Prognosis.—The prognosis largely depends on the nature of the lesion, and the possibility of its becoming dispersed or being surgically removed.

Treatment.—Treatment is only possible when the lesion is gummatous, or when operative interference can be attempted with any hope of success.

CHAPTER XII

EPOCHAL INSANITIES: PUERPERAL INSANITIES; CLIMACTERIC INSANITY; SENILE INSANITY

Puerperal Insanities

Under the head of Puerperal Insanities will for convenience be included all those forms of mental disorder which are associated with the period of reproduction in the female. There is no form of insanity which is characteristic of, or special to, this period, but it is instructive from the clinical aspect to review the puerperal insanities as a whole, for although they are similar in general respects to those of other epochs of life, they are of necessity greatly coloured by the special condition, and so form a definite group of their own.

Ætiology.—The general causes are similar to those in other forms of mental disorder. We find a *neurotic inheritance* in a large number of cases, and it is interesting to note that in some instances there seems to be a direct transmission of a tendency to break down at the reproductive periods. It is by no means uncommon to find mother and daughter each with a record of mental disorder during child-bearing. It may be that dread or expectancy play an important part as a determining factor. The *age* of the woman is important. First pregnancies after thirty-two years of age are always accompanied by risk in neurotic persons. The writer has also seen several cases of puerperal insanity in women who, having already borne children earlier in life, begin to reproduce again after a lapse of ten or more years. Some women are more liable to break down when bearing *male children* than female, and *vice versâ*. A knowledge that the child will be illegitimate is a potent factor, especially in the higher ranks of life. *Desertion* by a husband has been known to determine a mental break-down, and the *death of a husband* or other severe domestic loss may lead to a similar result. *Previous attacks* of insanity predispose to a recurrence at

this time, and this is markedly the case if the woman has already been insane with former pregnancies. *Alcoholic intemperance* and *syphilis* may predispose to mental disorder at this period. *Frequent pregnancies* within a few years may occasion serious nutritional disturbances which may terminate in insanity. *Dread* of the coming suffering may largely contribute to a mental break-down. *Persistent insomnia* during pregnancy is always an anxious symptom, and may ultimately lead to insanity. The use of *instruments* during labour has led to medical men being blamed if the woman breaks down within a few days of the birth of the child. If the instruments be in skilled hands, instrumental labour should not be attended by any such risks. Many hours of suffering during labour may, *by exhaustion*, produce mental disorder, and for this reason a primipara with a neurotic inheritance should be carefully watched if labour is prolonged, and either sleep should be obtained or instrumental interference resorted to. *Auto-intoxication* and *septic conditions* probably play a part in a certain percentage of cases. The writer believes that great variation in the general blood-pressure, brought about by alterations of direct pressure on the vessels of the splanchnic area, is a factor of no small importance in the production of puerperal insanity; this subject will be again referred to when discussing the pathology of the condition.

Varieties.—Mental disorders of the reproductive period are commonly divided under three main heads, viz.: (1) *insanity of pregnancy*; (2) *puerperal insanity proper*, or the mental disorder which appears during the first six weeks after the birth of the child; (3) *lactational insanity*.

The types of mental disorder met with at these various periods are either melancholia or mania, the latter being more common in cases in which the break-down occurs at labour or within the few following days. During pregnancy the depression may be quite acute, but during the later weeks of lactation the sub-acute types of melancholia are more common.

Mental Symptoms.—(1) *Insanity of Pregnancy.*—The mental disorder that develops during pregnancy is usually that of melancholia. The prodromal symptoms may be merely an accentuation of the 'longings' commonly found in neurotic

persons at this time. Sleeplessness is an important symptom, and one that calls for energetic treatment. The woman may begin to get over-anxious and worried. The morning sickness may be excessive, or the patient may misinterpret it and complain that she is being poisoned, and so refuse food. The depression is always more acute in the morning, and the woman should be watched in case any suicidal attempt be made. She may take a dislike to her husband, and make unfounded accusations against him. She may become apathetic and indolent, and quite unable to perform the simplest duties. Self-accusation is also common, and is usually accompanied by suicidal feelings. Hallucinations may also develop in support of various delusions.

The insanity of pregnancy has been subdivided into two classes, according to whether the break-down is (*a*) *before* the fourth month, or (*b*) *after* the fourth month. In the former class the condition is more hopeful, patients frequently recovering at the time of quickening. Those who develop mental disorder after the beginning of the fourth month, do not usually recover for some time after the child is born. This is an important point, as it practically answers the question whether premature delivery should be resorted to. As a matter of fact, neither induction of premature labour nor normal delivery gives more than a temporary relief to the mental symptoms ; so, unless otherwise indicated, surgical interference should not be resorted to. There is an important medico-legal aspect to puerperal insanity. An insane mother may be unconsciously delivered, and the child accidentally injured, or she may deliberately kill or attempt to kill her offspring.

(2) *Puerperal Insanity.*—There may be a transitory attack of acute mania at the time of delivery. In very unstable women the ordinary emotional disturbances may become excessive. The excitement usually passes off when the child is born. Again, immediately after delivery, within a few hours, there may be an outbreak of acute excitement, which may last for some weeks or may rapidly subside. Any form of mental disorder may develop during the puerperal period, but, as a general rule, if a woman breaks down within the first ten days or fortnight after delivery, the type of insanity is mania or so-called agitated melancholia. After this time insanity is

more likely to be of a depressive type. In the maniacal cases the excitement is usually very acute. Great restlessness is evinced, and food is refused. The patient is noisy, singing and shouting continually. Sordes may appear about the lips and mouth; the breasts, unless carefully treated, will become inflamed, and abscesses may develop. At times there is a marked rise of temperature. Frequently quite an early symptom is some expression of dislike of the husband or nurse. Transitory delusions may show themselves, and auditory or visual hallucinations may be present. There is one feature in puerperal mania which calls for notice, and that is that remissions in the mental symptoms are frequent. A patient will suddenly take food and in every way appear to be normal again. These intervals of apparent health often lead the friends to believe that recovery is taking place, and in this way vigorous and necessary treatment may be delayed. These lulls are soon followed by an accession of the excitement with all its accompanying symptoms. Further details need not here be given: the condition is now one of acute mania, which has been described elsewhere.

Agitated melancholia closely resembles the above, except that the emotional state is one of depression in the place of excitement. The important symptom to remember in this condition is the tendency to suicide. The patient makes accusations of all kinds against herself, and believes that she is unfit to be a mother. Acute melancholia of the ordinary type may be met with during the puerperal period; it commonly develops about three weeks after delivery. During recent years there have been several cases of general paralysis of the insane reported in which the first symptoms declared themselves during the puerperal period. In these cases the stress of child-bearing seems to be the final exciting cause; but, except for their bearing upon diagnosis, they do not call for special mention.

The course of the above disorders will be dealt with later.

(3) *Insanity of Lactation.*—This has been arbitrarily fixed as comprising those insanities which appear six weeks or more after delivery. The mental disorder is usually of the type of subacute melancholia with ideas of unworthiness. Suicidal attempts and infanticide are common. Some autho-

rities have divided these cases into two classes: (*a*) those in which insanity develops while the mother is still nursing the child; (*b*) those in which the mental disorder follows immediately upon weaning. The mental disturbance in the first class is largely the result of the physical exhaustion from suckling, for with weaning, careful feeding, and rest, health is soon restored. On the other hand, in the cases belonging to the second division, the insanity is more persistent, and often runs a longer course. Delusions of any kind may occur, and are similar to those found in the melancholia of other periods of life. The reader should again be reminded of the medico-legal aspect, which may become an important feature at any time.

Physical Symptoms.—(1) *Insanity of Pregnancy.*—The physical symptoms are largely those found in melancholia, together with the more special symptoms due to the pregnancy. Most women, and especially those of the neurotic type, have altered appetites during child-bearing. The question of feeding is often a difficult one, for proper food may be refused. Constipation is a symptom which constantly requires attention. It must be borne in mind that an insane person may not complain of pain or discomfort in the same way that her sane sister would do; it is therefore the more incumbent on the nurse to watch for symptoms such as retention of urine, varicose veins, severe œdema of the legs, and the like, reporting them to the medical attendant as soon as observed. Insomnia may be an urgent symptom, and should always be treated when the patient is at all neurotic. When the time of delivery is near, special care must be taken, for if the woman is very insane, she may not complain of the labour pains.

(2) *Puerperal Insanity.*—The physical symptoms at this time are often many and important, and there is a danger of their being overlooked when the mental symptoms are severe. Nurses are at times apt to forget their ordinary duties when suddenly confronted with mental disorders. When a child is weaned, the breasts demand regular and careful treatment; if they are neglected, an abscess may form in a very short space of time. Retention of urine is another very urgent symptom. The condition of the lochial discharges must be watched and reported on. The lochia may be arrested or

become offensive, especially in septic cases; but as a general rule these discharges follow a normal course. The bowels are usually constipated, and purgatives are constantly required. The physician should warn the nurse to examine the patient morning and evening for the ordinary complications which may occur at this time. The temperature should be regularly taken, as fever may be the first symptom of some lung disorder or of a local abscess. Rigors occur, but are not common. Convulsions may occur in rare cases. The tongue is usually dry, and sordes form about the lips and mouth. Nutritional changes may take place in the skin and its appendages; small local inflammations and abscesses are common. The pulse is frequent and low-tensioned. In severe cases the woman may pass into a low-muttering delirium, closely resembling the typhoid state. Most patients rapidly lose weight, and forced feeding is often necessary.

(3) *Insanity of Lactation.*—The physical symptoms depend largely on the form of mental disorder. We have already pointed out that subacute depression is the most common variety, and accordingly the bodily symptoms are largely those seen in melancholia. There may be great exhaustion from prolonged suckling—thus rest and forced feeding are indicated.

Course.—(1) *Insanity of Pregnancy.*—We have already stated that those patients who break down before the fourth month of pregnancy usually recover before the birth of the child. In the cases where the insanity does not develop until the later months there may be some temporary improvement at the time of delivery; relapse is, however, common, and many remain insane for some months longer.

(2) *Puerperal Insanity.*—The course varies according to the severity of the attack. In the severe forms the patient may pass into an acute delirious condition. If death does not supervene, the physical health improves after a few weeks and the excitement becomes less marked. The maniacal state may be followed by a period of stupor or general apathy. The latter condition may last for months, but passes to recovery; more rarely the delusions and hallucinations may persist, in which case there is a tendency for the patient to become weak-minded. Many patients recover rapidly.

(3) *Insanity of Lactation.*—The course is usually one of progressive improvement in the case of those who break down from stress of suckling; but where there is no marked failure of physical health the course is often long and tedious. Depression, with inability to do ordinary duties, and a tendency to suicide, may last for some months.

Diagnosis.—The diagnosis of mental disorder during pregnancy is not always easy. As already stated, the symptoms may merely be an accentuation of the 'longings' so commonly seen in pregnant women. They are often fanciful, and even emotional at times, thus further increasing the difficulty.

The diagnosis of certifiable insanity largely depends on the conduct of the patient. The danger of suicide must never be forgotten. During the true puerperal period immediately subsequent to the birth of the child, insanity may have to be distinguished from temporary delirium due to a septic fever. The latter is usually ushered in by rigors and fever, with suppression of the lochia. Even temporary delirium may pass on to a more permanent excitement or to acute delirious mania. With the delirious forms the condition is a very serious one, and the majority of patients die. We have already mentioned that occasionally general paralysis develops during the puerperal period; it is therefore necessary to examine all patients for any physical signs of this disease.

Prognosis.—The prognosis is decidedly good for patients who break down during the early months of pregnancy; but, although favourable, it is by no means so good for those who develop mental disorder during the later months. In the favourable cases of the latter class recovery does not usually take place until some time after delivery; about one-third of the cases of this class remain chronically insane. For those who become insane after delivery it is a good working rule to say that the nearer the break-down is to the birth of the child, the better is the prognosis. Patients who develop insanity during the first few days after delivery nearly always get well. Acute delirious cases must be excepted from this general rule, as a large percentage of these patients die. Insanity developing during the later months of lactation is often subacute in character, and tends to run a long course. Many patients may partially recover in asylums, but have to

be sent home for the cure to be completed. When these puerperal patients get well they usually keep well, and may never have a return of mental disorder, provided they have no more children.

Pathology and Morbid Anatomy. — Notwithstanding that much careful work has been done in the endeavour to find out the true pathology of puerperal insanity, at the present time very little is known. Auto-intoxication may be a factor in some cases, but it cannot be a constant cause. The writer thinks that variation in the general blood-pressure is probably an important element in the production of the mental disorder. When it is realised that during pregnancy the pressure on the splanchnic vessels is steadily increased, it seems likely that this may affect the cerebral blood supply, and that resulting nutritional changes may lead to mental disorder in unstable persons. With increased blood-pressure we should expect to find the patient inclined to be depressed, and this is the case, as melancholia is the common type of mental disorder found at this time. On the other hand, after labour, when there is a sudden withdrawal of pressure on the splanchnic vessels, there is in consequence a rapid fall in the blood-pressure, and accordingly we should expect to find a tendency to mania in the predisposed person. Now this is what does take place; for restlessness and states of excitement are the types of mental disorder prevalent at this period.

Treatment.—The treatment of any given case varies according to the type of the mental disorder, and the reader is referred to the chapters dealing with these special forms of disease.

Climacteric Insanity

There is no form of mental disorder that can be properly termed climacteric insanity; but from the clinical aspect it is well to review the varieties of mental disturbance met with at this epoch. At the menopause the individual undergoes a profound change, both mentally and physically, and in a person predisposed to insanity serious results may ensue. At the climacteric mental life becomes slower; there is a lessening of the sexual desire, and the affections change. It is the beginning of decadence. Even in this country, with its

greater accuracy of statistical data, it is difficult to fix with precision the climacteric years; but they may fairly be said to range between the ages of forty-three and fifty-one.

Ætiology.—As in the mental disorders of other periods of life, an unstable inheritance plays an important part in the production of insanity. A neurotic history is found in about fifty-four per cent. of the cases. A taint on the mother's side is a more potent factor than mental instability on the father's side of the family. Married women are more frequently affected than single women in the proportion of fifty-five to forty-five. Governesses and others who have to work hard for their living seem to be especially liable to mental disorder at this time. It is not so much hard work as unsuccessful work that excites disturbance. The worry and anxiety of knowing that no provision has been made for old age, privation, ill health, and physical disease are all important causes. Previous attacks of insanity during earlier periods of life render a woman more liable to a mental break-down at the menopause.

Forms of Insanity.—As we have already remarked, there is no special insanity peculiar to this period. Most authorities agree that states of depression are more common than any other form of mental disorder. The melancholia is usually of a subacute type, though at times the patient is restless and agitated. Maniacal and chronic delusional states, though less common, are by no means rare. Cases of general paralysis have also been reported.

Prodromal Symptoms.—The mental alterations and somatic disturbances frequently exhibited by the apparently healthy woman at the menopause may be the prodromata of actual insanity. Among the mental disturbances we may mention the following, viz.: insomnia, failure of attention, alteration of temper, irritability, changed affection towards husband, suspicions, jealousies, and at times a tendency to make false accusations. Some women have difficulty in performing their usual household duties. Groundless fears and waves of mental depression sometimes occur. Sexual perversions are not uncommon. Noises in the ears and temporary deafness are frequent symptoms. At this period there is a tendency to be introspective and hypercritical in the view of actions

of earlier life. Among the somatic disorders those referable to the vascular system are prominent; general flushings, congestion of the head, and giddiness. Gastro-intestinal disturbances are common. The growth of hair on the face, which has been remarked at this period, is noteworthy in association with the disappearance of the reproductive functions. The vagaries of the menstrual functions at this epoch are well known; gradual cessation, with irregularities in quantity and periodicity, or sudden cessation. Drunkenness in women in England and Wales has been shown to be more common at this time than at any other epoch of life. Habits of all kinds are easily acquired, as it seems to be a period of exaggerated 'suggestibility.' Care, therefore, should be exercised in regard to the use of a drug such as morphia. Medical men are often blamed for habits so formed, and not altogether without justice.

Mental Symptoms.—The mental symptoms are mainly a continuation and elaboration of the prodromata. Groundless fears may begin to haunt the woman. More and more she feels unable to cope with her daily work. Self-accusation of all kinds, with reference to things both past and present, begins to occupy the whole of her attention. Slowly she weaves her story, always ignoring evidence opposed to her beliefs, but readily embracing all that supports them. The patient fails to realise that she is ill, the very nature of her malady preventing her from grasping her true condition. It is the old story, 'what I feel must be true;' cold reasoning is impossible in the presence of such conclusive evidence from the senses.

Delusions of every kind may develop. The conscientious woman at once condemns herself under the belief that she is forsaken of her God, and her delusions are strongly tinged with a religious colouring. Another patient lays more stress on her physical symptoms, and misinterprets these. The abdominal sensations may be construed into ideas of pregnancy; or the anomalous cutaneous sensations may form the basis of delusions of electricity. Another believes that her husband is losing interest in her; she feels a sense of neglect and seeks for an explanation. The idea that he cares for another begins to creep in and gradually

establishes itself. Worthless evidence of infidelity is accepted; suspicions and jealousies increase, and finally culminate in some charge of unfaithfulness. These ideas are of no small consequence, as serious medico-legal questions have arisen from such delusions. The accuracy of the woman's statements should be carefully tested, and her mental condition should be thoroughly examined. Full notes should be taken at the time, and a consultation with a second medical man is advisable.

On the other hand, a woman may make a confession that she is guilty of some crime, whereas in point of fact her sin is merely the creation of her disordered brain. The delusions of a woman, more especially if she be unmarried, may take the form of believing that a certain man desires to marry her. She may go so far as to say that the man has actually proposed marriage; or she may excuse his bashfulness and content herself with the assurance of his feeling towards her, confident that love such as his needs no expression 'I know that he loves me' is enough for her, and she acts accordingly. Such a person has no shame; but as it is her conduct rather than her conversation which is at fault, it is often very difficult to certify her as insane.

In conclusion, delusions of persecution of almost every kind may be met with. Some women believe that they are the victims of a foul conspiracy, and that their fair name is being defamed. Others believe that they are being 'followed,' or that their thoughts are read. Hallucinations are frequently present, those of the auditory and visual types being the most common. Some authorities lay great stress on olfactory hallucinations, and believe that they are closely related to ovarian disease. The writer does not think that this is supported by either clinical or post-mortem evidence. In any case it is certainly desirable that, until symptoms of ovarian disease become clear, no resort should be had to surgical interference or even less severe methods. The risks of suicide must not be lost sight of; and it is of interest to note that statistics show that suicide in women is most common between the ages of forty and fifty.

Physical Symptoms.—The physical symptoms are an elaboration of those already described under Prodromata. They

largely depend upon the forms of mental disorder with which they are associated. Usually there is a general nutritional disturbance which affects all the systems, and is similar to that found in melancholia.

Course.—The course that the illness follows is to a great extent dependent upon the type of mental disorder. If it is sub-acute melancholia, the duration is a long one, extending over eighteen months or two years. The symptoms may increase in severity in the earlier months, and asylum treatment is often necessary. The various courses of the disorders have been described under the different forms of insanity given in former chapters.

Diagnosis.—Amenorrhœa is a common symptom in most forms of acute insanity, and care must be taken not to confuse the menopause with amenorrhœa occurring during an ordinary attack of insanity in a woman under forty-five years of age.

Prognosis.—This is fairly good if the case is treated early; but if allowed to drift, the condition frequently becomes chronic. If recovery does take place, there may never be a return of any mental disorder, except in those cases in which there have been attacks before the menopause. With regard to the influence of the climacterium on existing psychoses, experience does not justify the hope that improvement will occur in the mental condition of those persons who have been ill for some months or years before the menopause. These persons usually continue insane after the climacteric is past.

Pathology and Morbid Anatomy.—There is no change which can be looked upon as characteristic of climacteric insanity. Some authorities consider that the condition is one of premature senility. Probably auto-intoxication is a factor of great importance. The writer believes that owing to the vaso-motor disturbances, which are common at this time, the general blood-pressure is markedly affected, and that in this way the cerebral nutrition suffers. Under these circumstances it is clearly the predisposed and unstable individuals who will be most liable to develop mental disorder.

Treatment.—When symptoms, which may be prodromata of insanity, appear at the climacteric period in patients with an unstable inheritance or a history of a previous attack, prophylaxis of a general kind should be adopted. Rest and

good feeding are indicated. At this time women frequently consult medical men concerning obscure symptoms in the region of the uterus and its appendages, and not uncommonly receive local treatment. Such measures are to be deprecated, as they tend to an undesirable self-concentration, and may ultimately convert the patient into an hypochondriacal invalid. The treatment of climacteric insanity is that of melancholia or such other form of insanity as the mental disorder may assume. The earlier the treatment, the greater is the likelihood of recovery. Removal from home surroundings is usually advisable, and is necessary in those cases in which unreasoning suspicion and jealousy characterise the insanity.

Senile Insanity

Mental disorder may develop at any period of life, and senility is no more exempt than other epochs. The term 'senile' is necessarily relative; for one man must be looked upon as old and decrepit when another, his equal in age, is still apparently in his prime. 'A man is as old as his arteries' aptly sums up the situation; one man reaches the years of decadence before another, owing to serious nutritional and degenerative changes taking place earlier in the arteries and other tissues of his body. Atrophy and decay is the natural ending of all forms of life. The time of the appearance of these indications of dissolution varies within wide limits, which, however, are regulated, apart from disease, by a well-established fundamental law. Organisations which mature rapidly, and reach their full development in a comparatively short time, tend likewise to decay early. So it is with the mental and physical aspects of human life. In tropical countries, where metabolism is active, the female is already reproducing her species while her contemporary in years, residing in a more temperate climate, is still in the nursery. But the slower development observed in the northern latitudes in the end proves its superiority, for it carries with it a longer period of maturity. Mental life, in its evolution and decay, closely resembles the physical: mental powers which are precocious and mature rapidly tend to early degeneration. This truth enforces itself in the observation of many forms of mental disorder.

Ætiology.—As the male develops more slowly than the

female, senile involution with him usually begins later, and most authorities agree that from sixty to sixty-five is the common age for senile symptoms to appear.

A neurotic inheritance is found in a fair percentage of cases of senile insanity, but clearly an unstable inheritance must be a far less potent factor in old age than in youth. On the other hand, previous attacks during earlier life are important as predisposing to an attack of mental disorder when senility is reached.

Organic cerebral disease may be the exciting cause. Careful distinction must be drawn between insanity, the result of organic brain change, and the so-called functional psychoses, which may appear during senility in the same way as they do at any other period of life. Uræmia and other toxic influences, such as alcoholism, may be the exciting causes of mental disease during old age. Anything which leads to malnutrition and slow progressive degeneration of the brain must be included among the ætiological factors.

Varieties of Insanity.—There is probably no form of mental disorder which can be properly termed senile insanity, but many types of disorder may be met with in old age. For convenience, it is better to divide these mental diseases into two main classes: (*a*) the *so-called functional or temporary psychoses*; (*b*) the *organic psychoses*. This is not, it need scarcely be said, advanced as a scientific method of classification, for probably all cases show some organic change. It is however, convenient, for in the functional psychoses may be included those forms of mental disorder which are curable, and which resemble the insanities of earlier life. The organic cases are those suffering from slow and progressive senile brain changes, persons whom Savage has aptly described as 'men who are dying from above downwards.'

Mental Symptoms.—These vary according to the forms of mental disorder. The early symptoms both of the functional and organic psychoses are failure of power of application for concentrated thought, general irritability and restlessness, loss of body weight, and increasing sleeplessness. With the organic forms, failure of memory, more especially for recent events, is a prominent symptom. A brief description of the types most commonly met with in old age follows.

1. *Functional Psychoses.*—(*a*) *Melancholia.*—Depression is by no means uncommon. The patient has vague fears of ruin; he cannot attend to his business as he used to do; younger men seem always to compete successfully with him; he accuses himself of neglect; he remembers that many years ago he borrowed some stamps from his firm and never replaced them, and he argues from this that he must have defrauded his partners. He rakes up early errors, and magnifies them into criminal deeds. He believes that he has brought ruin and disgrace on his family, and that he must end his days in prison. Another patient develops hypochondriacal ideas; he believes that his body is being slowly consumed by some baneful disease, that his abdominal viscera are loaded with excreta, and that the normal functions of the body are no longer performed. The most common delusions are those stated above, but almost any form of false belief may be met with in senile melancholia. Hallucinations and illusions are found in some cases. Suicidal tendencies are as a rule prominent, attempts at self-destruction being frequent. Many aged persons exhibit serious homicidal tendencies, and this symptom may occur in both the functional and organic forms of mental disorder observed during senility.

(*b*) *Mania.*—A general feeling of well-being may be an early symptom in senile insanity. This is usually ushered in by a short period of increased activity and sleeplessness. States of mild excitement in the senile may have a very important medico-legal aspect. Old men—always, be it remembered, a relative term—who have lived honourable and honoured lives, may offend against the moral and social laws by some sexual act. Just as control is an attribute of late development, so it fails early with dissolution. Sexual indiscretions in these cases are, as a general rule, due rather to loss of control or to impulse than to any criminal intent. The offences vary from obscene talk and acts to more serious crimes, though the latter are comparatively rare. Commonly the acts are so foolish and childish that one would have thought that even the mind untrained in mental disease would see that they bore upon them the stamp of senile deterioration. A proper undertaking from the relatives of the patient to safeguard society from any further scandal or harm, or at

most an order for detention in an ordinary asylum, might reasonably be thought to meet the demands of justice. Unhappily our law does not permit or its administrators always sanction this view. It may be through defect in the law itself that a course, which the larger justice of scientific experience suggests, is not taken. If that be so, the remedy is by legislation. There is, however, ground for supposing that sometimes the fault lies in the deficient scientific knowledge of the administrators of the law. It may be inevitable in the present state of our law that an old man, whose every action of his healthy life has redounded to his credit, should be dragged through the criminal courts in his life's decay; and until some change be made in the cumbrous machinery of administration, this is perhaps to be expected, though it may well be deplored. There is, however, no excuse for the ignorance of established facts of mental science, which awards to the poor victim of his mortality some savage sentence of imprisonment. Even if it be necessary in the interests of society not to make too fine a distinction between vice and insanity, some exception might fairly be looked for where senility lapses into crime. Character changes in decay; to punish an old man for an offence which from failure of control he has committed, is to punish him for being mortal. It is in the treatment of these senile delinquents that the inefficiency of the present methods of trying cases, involving issues of sanity or responsibility, is glaringly apparent. It may occur that the position and means of the offender permit the calling of eminent specialists in mental disease on his behalf. If they are successful in winning the court to a reasonable view of insanity, the luckless prisoner may hope to end his days in such comfort and dignity as a criminal lunatic asylum may afford. Too often the plea of insanity or irresponsibility cannot, by reason of the poverty of the prisoner, be properly enforced. In that case an honourable life may close in the dishonour of a common gaol.

In the chapter on Testamentary Capacity attention has been drawn to the want of a properly constituted court, such as a judge and two medical assessors, to try 'will' suits. Some such tribunal might far more suitably than the conventional tribunal try a number of cases of other kinds,

involving issues requiring special medical knowledge for their due treatment.

From the above observations the physician will appreciate how important it is that relatives should be warned to exercise careful supervision over a man who in any way shows a tendency to excitement. A serious difficulty is that until he has once offended, it is not easy to treat him on mere suspicion. To return to the broader aspect of the subject, a senile person may have definite attacks of acute mania; he may become incoherent, noisy, and irritable; and at times delusions and hallucinations may be present. A tendency to mistake identity is a frequent symptom. The excitement may be intense with great insomnia, and may lead to exhaustion and death. Patients with senile mania are always restless; they frequently stand and shout at their bedroom door all night. Refusal of food may be an important symptom, and is always one that requires careful attention.

2. *Organic Psychoses.*—In cases where the mental disorder is due to gross brain changes, it is common to find a condition of progressive dementia. The mental attributes fail in the inverse order to that in which they were acquired. Memory for recent events fails, and the patient is no longer able to store fresh impressions. At first, it is often difficult to distinguish between physiological deterioration and morbid changes, but the amnesia in the latter condition is commonly a prominent symptom. It may lead to serious breaches of the social and moral laws. Loss of memory may entirely prevent a person from earning his own livelihood, or may interfere with his ability to find his way about the streets, or even his own home. On these grounds amnesia alone may necessitate the removal of a patient to an asylum.

Profound confusion may be the mental state of another type of senile dementia. The emotional aspect is one of instability, and alternates between phases of weeping and laughing. In the more marked forms of mental disorder, there may be an intense exacerbation of excitement and restlessness. Such patients wander about aimlessly, mistaking identity, making false accusations, and behaving generally in an insane manner. Their habits become degenerate, and later they lose control over the bladder and rectum. After a time, with failure

of recent memory there may be exaltation of the remote and more organised memory. Events long past may be recalled with such vividness that they seem to have happened but yesterday. Family secrets, which have long been kept and almost forgotten, are related to the comparative stranger as matters of ordinary interest. Nothing is sacred to the senile dement; he loses all sense of proportion, all power of control. Delusions and false beliefs of almost every kind may haunt him, but as a rule they are fleeting and changing. Hallucinations, more especially visual and auditory, are common, and may be the cause of much distress to the patient.

Physical Symptoms.—With old age there is a general failure of all physical activity. Every system shows the marks of time upon it. Functions which formerly were wont to be performed unconsciously and with ease are now imperfectly or even painfully effected. In the ordinary functional psychoses the bodily changes are not so marked and serious as in the organic forms of this disorder. In the former the changes are largely those found in other cases of excitement or depression, but in addition there will be great decrepitude and other symptoms of increasing age. In organic senile dementia the physical changes are, as a rule, more profound.

The *gastro-intestinal system.*—There may be anorexia; the tongue is furred, with slight tremor; obstinate constipation is common, with a tendency to diarrhœa at times.

The *circulatory system* may show signs of marked degeneration. The heart may be dilated or exhibit other symptoms of disease; the arterial walls may be thickened and show sclerotic changes. The pulse may be slow, frequent, or irregular. An intermittent pulse is not uncommon, but intermittency is not so important a symptom as irregularity.

The *respiratory system* may become seriously affected during an attack of senile insanity; hypostatic pneumonia is a common cause of death.

The *genito-urinary system* is also affected, retention or incontinence being among the constant symptoms. The catheter has often to be employed, and even when used with the greatest care it may lead to vesical and other troubles.

The *nervous system* does not escape, and in addition to disorders of the special senses, such as illusions and hallucina-

tions already alluded to, many other symptoms may be encountered. Vertigo and singing in the ears are constantly complained of, and there may be slight apoplectiform seizures, which in rare cases are followed by paralysis. Cutaneous sensation may be disordered, and there may be pupillary changes with defect of the various eye reflexes.

The *muscular system* shows failure in many directions. Fine co-ordinate movements are no longer possible. The handwriting is especially affected, for, although it keeps its former characteristics, it becomes shaky and shows tremor and loss of power. There is tremulousness of all muscles ; the gait is unsteady, and ultimately the patient may become bed-ridden. The speech also shows failure of power over lips and tongue. The body weight falls, and the skin, nails, hair &c. all show nutritional changes. The body temperature is about normal, and any feverishness usually indicates the onset of some intercurrent malady. Sleep is uncertain, and may be either excessive or deficient.

Course.—With the functional psychoses the course is similar to that of states of depression or excitement observed at other epochs of life. The mental disturbances may not be severe, and if the bodily health does not suffer to any great extent, the attack may be of comparatively short duration. With organic disease it is different, progress then being one of steady deterioration ; death may ensue at any time from some intercurrent disease.

Diagnosis.—The chief difficulty lies in distinguishing the curable from the incurable forms of senile insanity. The state of the memory is frequently of help in diagnosis. If there is a steady loss of memory, there is no doubt that organic dementia must be diagnosed. Again, with the progressive forms of this disease there is greater tremulousness and more rapid physical failure. In the slowly progressive forms, it is often very difficult to say when the line of insanity has been crossed, and to distinguish physiological dotage from actual disorder. In these cases the diagnosis must largely depend upon the conduct, and the presence of delusions or hallucinations, which influence the actions of the patient.

Prognosis.—The prognosis is never very favourable, but many senile patients suffering from mania or melancholia

recover to a very marked degree. They may be quite well enough to be at home, but seldom regain sufficient mental power to be able to return to their former work. It is important to remember that, even in pre-senile insanities as well as those occurring during the years of decadence, an attack of insanity usually incapacitates a man from further work, though he may sufficiently recover to be able to perform social duties and live quietly at home. Some senile patients remain very comfortable and happy in an asylum, but relapse at once when discharged. The even life of an institution suits them, but the slightest worry or trouble causes them again to break down. These persons can often be allowed out on parole with their friends, but they must have the protection which an institution affords them. The chances of life are not lessened by an illness of this kind. With severe cases, where there is intense restlessness and insomnia, the outlook is very bad.

Pathology and Morbid Anatomy.—We are still in the dark as to why atrophy and degeneration take place in old age; that everything grows old is certain, but why this is the case is a problem for futurity to solve. Some authorities believe that the change is due to an auto-toxic condition, and state that senile involution is not due to natural failure of vital energy, but that it is a degeneration of toxic origin. Ford Robertson[1] strongly supports this theory, and goes so far as to say: 'In typical cases of senile insanity the evidence in support of the essentially auto-toxic nature of the pathological changes is, to my mind, absolutely conclusive. Indeed, I would regard senile insanity as the best example that we have of mental derangement determined by auto-intoxication. The kidneys are cirrhotic; the liver is atrophied, or shows some other forms of chronic morbid change; the lungs are often emphysematous, or present evidence of chronic congestion; there is frequently chronic bronchitis; the stomach is commonly dilated, and there are generally signs of imperfect intestinal action. All of these morbid conditions of the internal organs imply incomplete and perverted metabolism, and consequent auto-intoxication.'

Ford Robertson contends 'that normal senile involution is associated with auto-intoxication, and that senile insanity

[1] *Pathology of Mental Disease.*

essentially represents a more intense, and in some respects irregular, form of the same condition, although, no doubt, additional factors are often added.' This theory of auto-intoxication is suggestive and full of interest, and is supported by a large body of evidence. It is a theory which might explain why one man grows old before another, and why some diseases tend to decadence more markedly than others. With all this there seems to be something lacking, and it is not wholly convincing. Atrophy and decay seem to be too regular in their onset to be explained by such a theory, for with autumn all vegetation dies together. Further, in the animal world senility appears at different ages for different creatures, and yet each reaches its allotted span within narrow limits. One would rather expect to find that decay and auto-toxic changes are the result of, or have been permitted to take place by, some subtle alteration in the tissues, and that they are merely symptoms of some third and primary cause. In the near future something may be learned from radium, as its influence on life and vitality seems remarkable.

The following are the most noticeable microscopic changes. The brain is atrophied and lighter than normal. The skull may be thickened, and the dura is commonly found to be adherent to the calvarium. The Pacchionian bodies are increased in size. The pia-arachnoid is also thickened, and may contain some milky opacities; it is scarcely ever found to be adherent to the convolutions, and as a rule strips readily. Pachy-meningitis interna hæmorrhagica has been found in some cases. The convolutions are atrophied and shrunken, and the sulci are wide. There is a great increase of the cerebro-spinal fluid; the ventricles are dilated, and the ependyma is thickened, but rarely granular. Small localised softenings may be seen. Microscopically the neuroses are found to be atrophied and degenerate; chromatolysis and achromatolysis are to be observed. The neuroglia throughout the cortex is increased, and some of the cells show pigmentary degeneration. The vessels show extensive arterio-sclerosis.

Treatment.—The treatment of any given case depends on the type of the insanity. The reader is referred to the various chapters on the special mental disorders, and to the one on Treatment in general.

CHAPTER XIII

INTOXICATION PSYCHOSES: ALCOHOLISM: MORPHINISM; COCAINISM; PLUMBISM

Alcoholism

The relationship of alcohol to insanity is very close indeed. As an individual cause of mental disorder, alcohol probably stands pre-eminent; for it not only affects the individual, but if he has children it engenders in his offspring a tendency to intemperance, epilepsy, idiocy, or insanity. Alcohol may act with injurious effect on any organ of the body. In acute intoxication it is the highest parts of the nervous system that suffer most severely, but the other systems of the body are directly or indirectly affected. One person will tolerate alcohol to a greater extent than another. This is well shown by the effect of alcohol on different races. Most primitive peoples are extremely intolerant of the drug, the effects of which, unless withdrawn, will even threaten the continued existence of such races. Nations such as the English can take alcohol with greater impunity, at any rate so far as the immediate effects are concerned. A. Reid has explained this on the theory that an alcoholic 'immunity' is established in races who have drunk hard for centuries. It may be true that this 'immunity' exists for immediate effects; but there is little doubt that a people drenched with alcohol must suffer in the finer attributes and qualities, and in time show mental and physical deterioration.

The nervous system suffers most from the ravages of alcohol, yet some persons may drink heavily for years without showing any signs of marked mental degeneration, though they may suffer from gastritis or cirrhosis of the liver. The fate of an individual is probably largely decided by his inherited tendencies. Alcohol attacks the weakest system of the organism. If the nervous system is unstable, it will be

early affected, and it must be remembered that this instability may be either inherited or acquired. Instability originating from sunstroke or head-injury will, under the influence of alcohol, produce more pernicious results than even congenital defects. Alcohol not only lowers the powers of resistance of the organism to certain diseases, but it seriously complicates almost every malady. He would indeed be a rash physician who would risk his reputation by giving a good prognosis in an alcoholic patient suffering from pneumonia. To sum up: alcoholism is so far-reaching in its results that in the individual we find a progressive tendency to mental and bodily deterioration and a lowered resistance to disease; in the offspring, a proneness to idiocy, epilepsy, and criminality; and in the race, a higher disease rate, a higher mortality rate, and a lowered birth rate.

Ætiology.—A neurotic inheritance is by far the most important factor. It tends to instability in the offspring, and is accompanied by a diminished power of resistance and general weakness of inhibition. Some authorities state that an acquired peculiarity is not transmitted; whether this statement be true or not, in practice there are undoubtedly found families in which alcoholic tendencies occur in several generations. The instability may show itself early in life by convulsions, night terrors, precocious evolution, or physical and mental stigmata of degeneracy. In some persons alcoholic habits are merely the result of a degenerate type of mind, the moral sense being defective; to this class the common drunkard belongs. Another class, which includes the dipsomaniac, may drink intermittently from a periodic impulsive desire.

Habit is an important element in the causation of alcoholism. A large number of persons first drink alcohol either from social or business reasons; from being light they become moderate drinkers; ultimately they may find that they have created a habit from which they cannot free themselves. Such persons may have had no inherited tendency to alcoholism, but have acquired it in their lifetime. There are in life, epochs in which the habit is more easily acquired than at others; in women, from forty to fifty years of age appears to be a dangerous period. Medical men are not infrequently

to blame for originating an alcoholic habit. A glass of wine or spirit is recommended for all kinds of indefinite neuralgia and discomfort. Temporary relief may be obtained, and the dose is constantly repeated until it becomes almost a necessary food. Again, with fatigue and stress of work a man may fly to alcohol to stimulate his flagging brain, and he finds that it supplies the energy that he wants. Instead of restoring his forces by the rest and nourishment which nature requires, he creates by the use of alcohol a fictitious activity, and the worn-out nervous system has to work on. The day of reckoning must inevitably come; there is a mental breakdown, probably complicated by the alcohol which has been taken to stave it off.

Alcohol which contains various impurities has undoubtedly a very deleterious effect on the economy of the organism. For this reason it is incumbent upon governments and administrations to protect the public from all kinds of adulterated wines and spirits. A word of caution may be added to this discussion upon alcohol as a cause of insanity. No doubt it is a very potent cause, but it may also be an early symptom of mental disease. The physician must be careful to distinguish between cause and effect. Further, defective control may be the scar left by a former attack of insanity, and it may show itself in a tendency to drink. In conclusion, the reader need hardly be reminded that constant 'nipping' is, as a rule, far more damaging to the nervous system than isolated bouts of drinking.

Varieties.—The forms of alcoholism to which we shall refer include both acute and chronic intoxication. In the former the mental disorder is largely due to the direct toxic influence of the poison on the brain, while in the latter it is often the result of structural alteration in the cerebral blood-vessels and nervous elements. The following conditions will now be considered in detail: (1) *acute intoxication* or drunkenness; (2) *delirium tremens*; (3) *mania a potu*; (4) *chronic alcoholism*; (5) *chronic alcoholic insanity*; (6) *dipsomania.*

Acute Intoxication.—Mental Symptoms.—1. Acute intoxication or drunkenness is of interest to the mental physician, as in some predisposed persons a temporary delirium may

pass on into more permanent insanity. A state of drunkenness is usually caused by a large quantity of alcohol being taken within a short space of time; but in the case of epileptics, or of those who have suffered from sunstroke or head-injury, small quantities of alcohol may suffice to produce intoxication. Alcohol exaggerates the normal temperament. The weak-minded person becomes, under its influence, foolish; the morose man weeps; the excitable man becomes merry and exalted. All the types of mental disorder associated with acute intoxication need not be described; they vary from stupor and mental confusion to wild excitement. The vast majority of intoxicated individuals recover within a few hours, but occasionally cases occur in which the mental disorder persists for days or weeks. Epileptic convulsions may be observed in a small percentage of these patients.

Physical Symptoms.—The physical disorders of drunkenness are, like the mental, very varied. One person will suffer from sickness and gastritis; another from severe motor inco-ordination and headache.

Delirium Tremens.—Mental Symptoms.—Delirium tremens is not often met with in asylums, as the attack is usually of short duration. There are, however, points of interest in the condition to which attention should be drawn. It is often caused by taking a large quantity of alcohol within a comparatively short space of time. But this is not always so—witness those cases in which no alcohol has been taken for weeks; again, delirium tremens appears after an injury or shock, or in connection with some illness, such as pneumonia. During the attack the patient is undoubtedly of unsound mind. The onset is not always so sudden as is often supposed; it is usually preceded by a period of nervo-muscular excitability. The sufferer is impulsive, flies into a sudden passion without adequate cause, and becomes timid, suspicious, restless, and gloomy. The approach of night brings an increase in the force of his fears, suspicions, restlessness, and sense of gloom. He does not sleep, and misinterprets every sound. As time goes on, hallucinations, generally visual in character, appear at night. Animals and insects crawl about his bed, vampires and imps hover around him. He hears the noise of angry crowds shouting or singing outside, and is terrified, for he

knows they 'seek his life.' Less frequently the other senses are disordered; he believes that poison is placed in his food, or smells the sulphurous gases that are driven into his room. As the case progresses, the hallucinations appear by day as well as by night. Delusions develop in explanation of the various sensory phenomena. The hallucinations are ever changing, and are usually terrifying to the patient.

Occasionally during an attack of delirium tremens a patient will suddenly become exalted, with the idea that he is an emperor or king, his former fears and misery having left him. This condition usually only lasts for a few hours, and then the patient relapses into his former restless and terrified state. This is known as the *ambitious* form of delirium tremens, and is not common, but nearly always indicates intellectual ruin. To return: patients with delirium tremens frequently mistake identity; the memory is good for remote events, but is bad for the more recent. They mistake their bedroom for a ship's cabin, or the hospital for a prison. Restlessness marks their actions, and they constantly busy themselves with their various hallucinations and delusions. Some of these patients are very suicidal, preferring death to continued persecution.

Physical Symptoms.—The gastro-intestinal system is disordered, the tongue is furred and tremulous. There is anorexia and refusal of food; the bowels are commonly constipated. The pulse is low-tensioned and frequent. Respiration is slow. The temperature is usually normal, and rarely exceeds 100° F. The skin is moist, and the patient often perspires freely. There is tremor of most of the muscles, and speech is affected. Epileptic convulsions may occur. The patient suffers from intense sleeplessness, the presence of which symptom may make the prognosis grave.

Course.—In the large majority of cases the course of delirium tremens is towards recovery. Hallucinations begin to disappear by day, only recurring by night; later they vanish altogether. Slowly the consciousness clears, and the mental equilibrium becomes re-established. In a small percentage of cases the result is not so good. To briefly summarise, the risks of delirium tremens are as follows: (1) That the patient may pass into a condition of stupor and coma, and ultimately die. (2) That the hallucinations may

persist after the other symptoms have subsided. (3) That delusions of persecution, poisoning &c. may persist. (4) That, after the attack, the finer attributes of the patient's character may become dulled, and lazy and immoral habits develop. (5) That from the temporary delirium the patient may pass into a state of ordinary acute mania.

Diagnosis.—Delirium tremens must be distinguished in diagnosis from acute delirious mania. In the latter the temperature is raised, and the hallucinations, though abundant, are not terrifying; in delirium tremens, the somatic symptoms and the history form the best guide.

Mania a Potu.—Mania a potu is another form of acute alcoholism, its chief interest lying in its medico-legal aspect. These patients suffer from a very acute form of excitement, but usually make rapid improvement when placed under proper treatment. The condition differs from that of delirium tremens in that there is not the same degree of physical prostration. Sufferers from delirium tremens look ill, but those with mania a potu commonly appear in good health. The latter usually have an insane inheritance, and very little drink will produce the condition.

Mental Symptoms.—The intense excitement in many ways resembles epileptic furor. The maniacal attack is sudden in its onset, and extreme in its violence; homicidal assaults are by no means uncommon. The sufferer is boastful and egotistical, and may be extremely exalted and extravagant. He spends money lavishly, and may write cheques far exceeding the balance at his bank. He is noisy and threatening in his conversation, and quarrels with his best friends. Hallucinations are rare. If a patient of this class is certified and placed under care, he often improves rapidly, and when this takes place the friends and the patient himself will frequently upbraid the medical attendant for having needlessly placed him in an asylum. On the other hand, if allowed to retain his liberty, the patient may injure others in his violence, and may compromise himself and his family financially. A medical man ought always to call in a colleague to discuss the treatment to be adopted, and then fully explain to the friends the probable course the illness will take; he may advise them, but it will be wiser to leave to them the

ultimate decision as to what shall be done. Treatment will be discussed later.

Physical Symptoms.—The general health is usually good. The tongue may be furred, and there is often analgesia. Insomnia is a constant and trying symptom, and it is frequently necessary to procure sleep by artificial means.

Course.—When once sleep has been obtained and the patient is under proper care, the course is generally towards recovery; and in many cases this takes place in about a month or six weeks, and occasionally within a few days.

Diagnosis.—The diagnosis is as a rule by no means difficult when the history is clear. The condition must be distinguished from epileptic excitement and other forms of acute mania. The physician must not forget to look for physical signs of general paralysis, for this disease may begin with sudden excitement.

Chronic Alcoholism.—Chronic alcoholism is brought about by the steady ingestion of spirits over a period of months or years. The alcohol is usually taken in small quantities, but frequently repeated. In some cases the somatic disturbances are the most prominent characteristics of the condition; others show a gradual and progressive mental deterioration. For a long time there may be nothing more than an increasing apathy and confusion of mind. Uncertainty of memory and unreliability in work may be observed. During this time sensory and motor disturbances may appear, varying in severity in different cases. The whole condition is one of steady deterioration. This general failure, whether it be mental, motor, or sensory, follows the law of dissolution of the nervous system; i.e. the latest acquired, and therefore least organised, attributes go first, and in the sensory or motor systems the derangements first appear at the periphery and extend towards the centre.

Mental Symptoms.—The power of attention steadily fails, and there is a progressive weakening of the intellectual faculties. The memory becomes markedly affected, and there is inability to store fresh impressions. The amnesia becomes more and more serious, until finally the patient may not only be unable to do his daily work, but may become incapable of looking after himself and his affairs. With this forgetful-

ness there is often great irritability, and the patient becomes suspicious of the intentions of those with whom he is associated. The loss of the moral sense is very noticeable, and may be an important symptom. The finer attributes of the character disappear, and give place to untruthfulness and general untrustworthiness. The language is often obscene, and all sense of decency may be lost. The chronic alcoholic may thus place himself within reach of the law by an offence against the social and moral codes. There may be outbursts of loss of control, with destructiveness. An overbearing and offensive manner towards their relatives often marks the attitude of these patients, who bring discomfort and misery to their homes.

Physical Symptoms.—These vary greatly in different individuals. Gastritis and anorexia are common. Speech is blurred and defective. The gait is uncertain owing to general loss of tone in the muscles. There is a fine tremor of the hand and fingers, which is first noticeable in the morning, and subsequently becomes manifest all day. The oscillations are regular and rapid, and are exaggerated by voluntary movements. The tremor of the alcoholic has the peculiarity that it decreases under the influence of drink, and is most marked in the early morning, when the immediate effect of the poison has passed off. Ingestion of more alcohol for the time re-establishes the equilibrium, and the tremor disappears; this is a characteristic of all poisons. It is for this reason that the chronic drinker says that he is incapable of work until he has had his morning glass of spirit.

There is inco-ordination of movements, the finer adjustments, such as are necessary for handwriting, &c., being most affected. Vertigo is a common symptom. Peripheral neuritis is often observed in these cases, more especially in females. The knee-jerks are exaggerated, diminished, or lost; there is often wasting of the extensor muscles of the leg, producing foot-drop. Convulsions may be due to organic disease, such as atheroma, softenings, hæmorrhages, though at other times they seem to be due to some temporary disturbance. The motor disturbances usually appear before the sensory. The latter, like disorders of movement, begin in the extremities of the limbs, and are often symmetrical. These sensory disturbances may

take the form of exaggerations, diminutions, or perversions of general and special sensibility. Analgesia is common, or the patient may have peculiar sensations about the skin, such as tingling or pricking. Hallucinations and illusions may begin to develop; at first they are indefinite, but as time passes they frequently become more organised. There is usually insomnia, which tends to increase the mental disturbances already alluded to.

Course.—The course is usually a progressive one, and the rapidity with which mental deterioration takes place depends on the quantity of alcohol imbibed. Early and energetic treatment may be successful in a certain percentage of cases. Some persons become more and more weak-minded, or succumb to some intercurrent malady; others develop definite chronic delusional insanity.

Diagnosis.—The diagnosis of chronic alcoholism is, as a rule, quite easy, but definite alcoholic insanity may be confused with other forms of mental disorder, and especially with general paralysis of the insane.

Chronic Alcoholic Insanity.—By chronic alcoholic insanity is meant those forms of mental disorder which develop as the result of steady drinking over an extended period. The condition may be one of progressive weakening of the intellectual faculties, until ultimately permanent dementia results. Other persons develop a condition of mental confusion or stupor; others, again, may exhibit an acute or chronic delusional mental disorder. Finally, there are those who manifest an insanity which closely resembles general paralysis of the insane, and, for want of a better term, has been called *alcoholic pseudo-general paralysis*, or *alcoholic pseudo-paresia*.

Mental Symptoms.—If the condition is one of progressive dementia, there is a steady failure of all the mental faculties. The loss of memory is very marked, and may be the symptom which finally decides the necessity of placing the patient under care. As time passes there is an increasing mental deterioration; the patient becomes dirty in his habits, and loses all power over his sphincters. He frequently mistakes identity, and may have hallucinations of any sense, most commonly of the auditory and visual. From time to time he may express delusions, but with increasing dementia

they tend to disappear. The delusional type is probably the most common; it may develop somewhat rapidly or quite slowly. The idea of self, as has been already observed, is largely dependent upon sensation. Now, if from any cause the special and general sensations become disordered, there is a great risk of the 'thought of self' becoming altered. Sensory disturbances of all kinds are common in chronic alcoholism, and if they persist they may ultimately lead to delusions. This is well seen in the illusions and hallucinations which are so common in alcoholic insanity, in which sensations are misinterpreted and attributed to mesmerism, hypnotism, electricity, and the like. Having once satisfied himself as to the cause, the patient will sooner or later fashion ingenious tales as to who his persecutors are, and why and how they carry on their campaign against him.

The auditory hallucinations are at first quite vague and indefinite, such as muffled sounds, whistling, and ringing of bells; later they become organised into 'voices,' which may taunt or give definite commands. The sounds may appear to come from the next house or through the floors or ceilings. Patients also hear the conversations of persons conspiring to injure or kill them. Weird sights are seen at first by night, and later by day.

A woman will tell her nurse that the bed is full of babies, or that insects are crawling all over her room. She may complain that gases are being driven through the walls, and that the room is full of sulphur. She hears the electrical apparatus or telephone at work. Electrical shocks are felt; many patients will refuse to go to sleep, as they believe that as soon as they are unconscious their persecutors begin their experiments. New words and apparatus are invented and described by the patients to account for the unaccustomed sensations that they feel. One man at Bethlem said that there was a system of 'euphonic distribution' throughout the hospital, and that sound was carried by means of a 'needle apparatus;' he further stated that his persecutors used 'helioballs,' 'orophores,' and 'needle forms,' and that he felt needles go into his head and then burst. Another patient said that he was a 'switch,' and that every telephone message in the district was passed through him.

The emotional state of these patients varies, but very frequently they are depressed; this is especially the case with females. Outbursts of excitement may take place, and acts of violence may be directed against their supposed persecutors. Fear may be a prominent symptom; the patient may shut himself up in a room, under the belief that persons are seeking his life. Disorders of memory are very marked. Amnesia, varying in degree, is an almost constant symptom. The memory fails from the recent and least organised ideas to the remote and more organised. The patient has no idea of time, and if he recalls an event he is unable to say whether it occurred a day or a month or even a year ago. A friend will call to see him, and he may at once forget the visit, and even write a letter abusing the friend on the score of neglect. One may hold a conversation with an alcoholic individual and then retire, and upon returning find the conversation substantially repeated, as if the meeting were for the first time.

Further, it is of interest to note that when a man loses his memory he usually loses his desire to drink.

The failure of memory is an important point to be considered in the event of a patient suffering from chronic alcoholic insanity wishing to make a will. In addition to amnesia, illusions of memory are commonly found in these cases. This condition is known as Paramnesia. The patient will romance about what he has seen or heard, fully believing that it has all happened to him. A woman will tell you that she has just come back from a walk by the sea, although in point of fact she has never left the hospital grounds. Sometimes an illusion or hallucination may be an initial factor in the production of paramnesia. The patient recalls the original sensation, but with the revival fails to recognise that it was formerly based on an illusion or dream-state.

Suspicion is a prominent symptom in chronic alcoholic insanity, and may be associated with delusions of persecution. A husband in this condition will often accuse his wife of being unfaithful to him, and his hallucinations may support this belief. The various forms which the suspicions may take need not be enumerated; they are very numerous, and include apprehensions of injury to both person and property. On

the other hand, delusions of grandeur and ideas of wealth are not infrequently met with in this condition. An alcoholic patient at Bethlem Hospital believes that he is an emperor, and that the hospital building is his palace. He is continually hearing explosions, and these he misconstrues into guns being fired by his sentries who guard the palace. It is important to note that grandiose ideas occur in those forms of insanity which are most likely to be degenerative, and end in dementia.

In conclusion, there are those cases of alcoholic insanity which closely resemble dementia paralytica or general paralysis of the insane. In these the mental disorders may be of any kind; thus there may be expansive delirium with its delusions of wealth and social position; ideas of persecution, the patient believing himself to be the victim of a foul conspiracy; or there may be excitement or depression or progressive dementia. Hallucinations are often a prominent symptom.

Physical Symptoms.—The physical symptoms closely resemble those already described under chronic alcoholism, but when the patient becomes definitely insane the somatic disturbances often become more elaborated and pronounced. The motor disturbances include tremors, twitchings, and cramps, all of which may affect any part of the muscular system. Twitching of the supra-orbital muscles is very common in alcoholic patients. Tremors of the tongue and lips lead to defects in speech. Convulsions are occasionally met with. The knee-jerks may be absent, exaggerated, or unequal. The gait is frequently unsteady and hesitating. If there be severe peripheral neuritis, the patient is usually unable to walk, and may lose all control over the sphincters. The general failure is in the reverse order to that in which the attributes were acquired, the most recent and finer adjustments disappearing first. The muscular defects vary from some slight incoordination or enfeeblement to more definite paresis, or even paralysis.

The pupillary changes are important, especially in the pseudo-paralytic type. Inequality of pupils is noticed in a large proportion of cases, and in a small percentage the light-reflexes are found to be sluggish or even lost. This latter symptom is denied by some authorities. Reflex iridoplegia,

or Argyll-Robertson's pupil, is supposed by many observers to indicate a parasyphilitic condition, and not to be necessarily pathognomonic of any definite disease. There is no doubt that the loss of the light-reflex is very suggestive of some serious organic disease, and, if it be found to be present, it is always advisable for the physician to be guarded in giving a favourable prognosis. On the other hand, a mistake may certainly be made in definitely diagnosing a disease, such as general paralysis, because the light-reflex cannot be obtained, for if the pupils are in any way contracted, it is often very difficult to make a conclusive examination of the reflexes. The sensory disturbances are many, and usually appear at a later date than the motor. As has been stated, these sensory disorders may take the form of exaggeration, diminution, or perversion of general or special sensibility. Perversions of taste are common, and may lead to delusions of poison; similarly, all the other special senses may be affected. The sensory disorders, whether they are of the nature of hyperæsthesia or anæsthesia, are usually symmetrical in distribution, and are often readily affected by changes of temperature. The weight usually falls, and the various systems of the body are disordered to a greater or less extent.

Course.—In a number of cases when the patient has been placed under proper treatment, and all alcohol withdrawn, the progress is towards recovery. The physical health usually improves first, and is soon followed by mental restoration. On the other hand, even with marked physical improvement, the delusions may become more and more organised. Persistent hallucinations probably in a large majority of cases indicate chronicity. Both the chronically insane and the patients that are recovering frequently pass through a quarrelsome and fault-finding stage. They make all kinds of unfounded charges, and are constantly writing to various officers of State complaining about matters of a very trivial nature. They treat everyone who is in authority over them with suspicion; they magnify small annoyances into intolerable grievances, and describe in extravagant language incidents which are both trivial and unimportant. In some cases the course is towards mental enfeeblement, and a small number die from exhaustion or intercurrent disease.

Diagnosis.—The diagnosis largely depends upon a reliable history being obtained. The presence of hallucinations, which have been rapidly developed, is often of assistance in making an accurate diagnosis. Further, the presence of the characteristic somatic symptoms is also very helpful. If there are physical signs of organic disease, the diagnosis from general paralysis of the insane is often very difficult, as the history may not altogether assist us. A history of syphilis is a factor which will carry great weight, but it is by no means conclusive. The differential diagnosis between alcoholic pseudo-paralysis and general paralysis must largely depend on physical symptoms, as the nature of the mental disorder often gives but little assistance. The following points should be considered :

(1) *Pupils.*—There may be inequality, reflex iridoplegia &c. in both diseases, but the latter symptom would certainly favour general paralysis of the insane.

(2) *Primary optic atrophy* would favour general paralysis of the insane.

(3) *Tremors of tongue* occur in both, but an ataxic tremor of tongue is more common in general paralysis of the insane.

(4) *Loss of expression* is observed in both, but is more common in general paralysis of the insane.

(5) *Greasy* condition of skin and face is more common in general paralysis of the insane.

(6) *Defects of articulation* occur in both, but the general paralytic slurs his words more, and is more hesitating than the purely alcoholic, whose speech is usually thick and blurred.

(7) In *letter-writing* the general paralytic is more inclined to leave out letters and clip off the endings of his words than the alcoholic, but both show a tendency to make their fine strokes heavy and thick.

(8) *Convulsive seizures* occur in both, but are more common in general paralysis, especially if the seizure is of the nature of a temporary aphasia or deafness.

(9) *Headaches* are more constant in general paralysis.

(10) *Knee-jerks* are altered in both, and in the same way.

(11) *Sensory affections* are much more common in alcoholic pseudo-paralysis, and are of value in diagnosis.

(12) *Hallucinations* occur in both, but vivid visual hallucinations would favour an alcoholic condition.

(13) *Terrified* condition of patient is more common in alcoholic insanity.

(14) *Voluminous writing* favours diagnosis of general paralysis of the insane.

(15) *Buying* large numbers of the same articles is more common in general paralysis of the insane; an alcoholic patient is very extravagant, but buys different articles. Often it is very difficult to say from which disease a patient is suffering, more especially if, as often occurs, a general paralytic has an alcoholic history.

Prognosis.—Savage has enunciated the following aphorism: 'To the alcoholic all things are possible.' These few words contain a warning which must never be forgotten. Alcoholic patients may appear to be in a moribund condition, and may yet recover; their mental condition may be such that dementia seems to be the only possible termination, and yet within a few months the mental equilibrium is re-established. In the acute forms of alcoholic insanity it is always advisable to give the patient the benefit of the doubt, and at any rate hesitate for a time before giving a bad prognosis. With the more chronic forms, persistent hallucinations are always a bad sign. A very bad memory in a young person is unfavourable.

Dipsomania.—The dipsomaniac is not a common drunkard, but one who suffers from a periodic impulsive form of insanity, which manifests itself in an imperious craving for alcohol. Some authorities have compared dipsomania to epilepsy, owing to its paroxysmal and periodic character. Frequently between the attacks no alcohol is taken, and the man is a respectable and useful member of society; in fact a dipsomaniac is often ashamed of his weakness, and is constantly striving against it. The prodromal symptoms are irritability, anorexia, inability to fix attention, depression, and an indefinite sense of fear of impending trouble. The patient usually struggles hard against the impulse to drink, and may even go to his friends, and beseech them to protect him. Unless assistance is given, the irresistible desire proves too strong, and the patient abandons himself to desperate drinking. Thus the taking of alcohol is a *complication* of dipsomania and not a cause. Once the patient has started to drink, he may continue until an attack of delirium tremens

supervenes ; on the other hand, the bout of drinking may last only for a few days or weeks, and terminate spontaneously. The attack is frequently followed by a period of depression, during which care must be taken to guard against the risk of suicide. A man may have only three or four attacks in his lifetime, but each fresh attack renders him more liable to a recurrence.

Morbid Anatomy of Alcoholic Insanity.—The pathological changes found in acute alcoholism are similar to those seen in the brains of patients dying from other toxic agents. There is marked œdema of the brain and serious congestion, and there is a condition of chromatolysis and achromatolysis in the nerve cells. In addition to these changes in the brain, other organs may show evidence of chronic alcoholism.

Ford Robertson writes : 'There are, I think, three great factors that it is necessary to recognise in the pathogenesis of chronic alcoholic insanity; namely, (*a*) the direct toxic action of alcohol ; (*b*) a secondary auto-intoxication ; and (*c*) the special reactive qualities of the individual brain.' [1]

From the careful study of the brains of persons dying from acute alcoholism, it is clearly proved that alcohol has a direct toxic effect on the neurons. Its action is not, however, confined to the nervous elements, for, if alcohol is imbibed continually over a prolonged period, structural changes of a more or less severe kind will be found in several important organs of the body. These structural alterations must lead to marked disturbances of functions, and, as Ford Robertson points out, sooner or later a state of auto-intoxication is established. Now, this condition of auto-intoxication is probably a weighty factor in the production of chronic alcoholic insanity. No doubt the special reactive qualities of the individual brain are often the determinating factor of an attack of insanity, for some brains are more liable than others to be damaged by a particular toxin. To again quote Ford Robertson, 'slowly, but with steady progression, excretion is rendered imperfect, and metabolic processes become perverted. Auto-intoxication has set in, and consequently vascular changes, closely resembling those that have already been described as occurring

[1] *Pathology of Mental Disease.*

in senile insanity and in general paralysis, take place throughout the body. . . . In many cases of chronic alcoholic insanity, the changes in the cerebral tissues are practically indistinguishable from those that are regarded as typical of senile insanity, and in some they closely approximate to those that are most characteristic of general paralysis. These facts have often been observed and remarked upon, but, as far as I have seen, no one has satisfactorily explained them. I maintain that the true explanation is simply that each of these three diseases has an auto-toxic basis.'

The pathological changes are: (*a*) *macroscopic*; (*b*) *microscopic*. (*a*) With regard to *macroscopic* changes: these, like the microscopic, largely depend upon whether the patient died during the early or later stages of the disease. In its more advanced state we find that the brain is below normal in weight, and that the convolutions are atrophied and shrunken. The dura and pia-arachnoid are thickened, the latter showing milky opacities. The vessels at the base of the brain are thickened. The ventricles are dilated, and may even show a granular condition of the ependyma.

(*b*) *Microscopic.*—Chronic proliferative and degenerative changes are found in the dura and pia-arachnoid. The vessels show an advanced state of endarteritis. Bevan Lewis has drawn attention to the fact that the cortical vessels show atheromatous, fatty, and degenerative change in their several coats. The vessels dipping into the cortex from the pia-arachnoid are of undue size, coarse, and tortuous, and the coats are atheromatous and fatty. The perivascular space is distended by numerous lymphoid elements. Aneurysmal dilatations of the small arterioles are frequently seen. The cells of the neuroglia are hypertrophied, and there is great abundance of the so-called *spider cells*. Masses of 'colloid bodies' are to be found lying between the pia and cortex, and are the product of some degenerative change. Important alterations are found in the nerve-cells and their processes. Many of the cortical nerve-cells have disappeared, and others show marked degenerative changes, similar to those found in general paralysis. These will be described in discussing the morbid anatomy of that disease. Bevan Lewis states that the second and third layers of the cortex contain no prominent lesion,

but that the cells of the fifth layer (large motor cells) are in an advanced state of degeneration. The medullated sheaths are also affected, and the axon is swollen and often fusiform. Swellings and varicosities of the dendrons have also been observed, and the gemmulæ are frequently missing. The changes in the fine protoplasmic contact granules of the apical expansions are regarded by Andriezen as important factors in the production of the amnesia, so commonly met with in alcoholic insanity.

Thus, it will be seen, the vascular, nervous, and connective tissue elements in the brain are all affected ; and many theories have been propounded as to where the primary change takes place. Every year seems to bring more proof that the first changes are to be found in the vascular structures. In conclusion, it must not be forgotten that morbid changes of a more or less severe nature are to be found in many organs of the body.

Treatment.—The patient must be deprived of his alcohol, and this can rarely be done except in an institution or in the home of some reliable person. Many attendants are easily corrupted by bribes and promises, therefore it is very necessary to have the nursing carried out by persons of known character. Some authorities recommend that the alcohol should be gradually withdrawn ; others advise complete and immediate withdrawal. Undoubtedly the latter method is the better one when it can be employed, but occasionally the physical state of the patient is so weak that such a course is inadvisable, and the drug has to be given in diminishing doses. The abrupt method of withdrawal is possible in the great majority of cases ; and even if there is any sign of collapse, this can usually be overcome by forced feeding and the administration of drugs such as strychnine and caffein. At first the patient will be very restless and excited, and he may develop symptoms such as vomiting and diarrhœa. Sleeplessness is another trying symptom, and usually hypnotics have to be given. It is needless to say that care must always be taken to prevent the patient becoming dependent on the sedative employed, and in no case should he be told the name of the drug. The diet should be liberal and of a nourishing nature, and any ten-

dency to refusal of food must at once be met by forced feeding. The bowels will require constant attention, and in severe cases there may be retention of urine. In short, the treatment is practically the same as that which has to be followed in treating other forms of acute insanity, and the reader is referred to the special chapter on this subject.

Morphinism

The practice of taking morphia is one of those terrible habits through which many men and women ruin their own happiness and the peace of their family life. It seems to be increasing rather than diminishing, and should demand the attention of all thoughtful physicians. It is a matter for regret that many of the victims of this habit are connected with the science of medicine, either as physicians, surgeons, dentists, or nurses. These persons should well know the risk which they are running. But there is another large body of morphia takers, who begin the habit in all innocence, and all too frequently on the advice of their own medical attendant.

We live in an age which is intolerant of pain; men turn at once to the physician for a draught to relieve their suffering. It is an age in which most men and women have to work hard for a living; proper periods of rest, for various reasons, cannot be taken, and bodily fatigue, with all its vague and indefinite discomforts, weighs heavily on the organism. 'I have no time to rest, but I must have relief,' is the cry, and in vain the physician tries his therapeutic art, until at length, from sheer exasperation or the importunity of his patient, he gives morphia, the certain panacea of all pain. The effect is almost miraculous—the misery and suffering fade before returning energy and animation. Work which was formerly unbearable is now a pleasure, and once again life seems worth living. Twenty-four hours pass away, only to see a return of the original weary feeling, and once again the dose is sought and relief obtained. Week by week and month by month, often in ignorance, the unhappy man relies more and more on his daily draught. The dose which formerly gave relief has had to be increased continually. The patient sooner or later becomes anxious, and maybe fears that he is

becoming dependent upon the drug. He salves his conscience with the thought that when he gets stronger he will give it up; but that day never comes. The drug, which was formerly taken to relieve pain, is now almost a necessary food. When once the habit has been formed, it is practically outside the limits of human purpose to overcome it. If the patient is of strong character, the habit may for years be kept within bounds; but, whether the patient be strong or weak, the day ultimately comes when the poison gains the upper hand—the result is mental and physical collapse.

Ætiology.—The common period of life for acquiring this habit is between twenty and fifty years, but most people develop it before thirty-five. Both sexes seem to be almost equally affected. A certain percentage of patients have a neurotic inheritance, but a large number have no such history. As the drug is a costly one, the habit is chiefly confined to the upper and middle classes. As a rule morphia is primarily given or taken for the relief of pain.

Mental Symptoms.—In the first place morphia gives an exhilarating effect, with a feeling of increased mental vigour and power. It is often effectual in dulling the sense of care and annoyance. With its continued use symptoms of mental and moral failure begin to develop, but the onset varies greatly in different individuals, and is largely dependent upon the amount of morphia taken. One person will show mental symptoms after a few months, in others there is nothing very noticeable even after many years. In time the memory weakens, there is lessened power of attention, and the intellectual powers readily fatigue. Nevertheless, after a dose of the drug, the mental equilibrium may be re-established, and the patient is once more mentally active and intellectually brilliant.

If there is one symptom which more than others is characteristic of drug poisonings, it is *moral* deterioration. Untruthfulness is common, and there is a tendency for the patient to distort the acts and saying of others, so as to lend colour to his own warped judgment. It is indeed distressing to see a generous nature gradually being undermined, and slowly but surely being replaced by a fault-finding and uncharitable spirit. During acute intoxication hallucinations

and other sensory disturbances may be experienced, but hallucinations are not common unless the morphia is supplemented by cocaine. Periods of excitement and general confusion may occur; at other times there may be apathy or depression. The mental condition of the patient may be such that it is necessary for him to be placed under certificates. This procedure may be of great value to the patient, as it may be the means of his complete restoration to health.

Physical Symptoms.—Frequently there is anorexia and constipation, and general derangement of the alimentary tract. The pulse may be slow, and even irregular. The patient looks very anæmic, with a parchment-like appearance of skin. The secretions are diminished, but at times there is profuse perspiration. There is general muscular failure, and the movements may be tremulous. The pupils are usually myotic. General and special sensation may be affected. In the male there may be impotence; in the female amenorrhœa and sterility.

Course.—This varies greatly in different individuals; in some the course is very rapid, while in others there are no severe symptoms for many years.

Diagnosis.—This is not always easy, as morphia takers are very secretive, and, unless surprised in the act of taking a dose, may evade discovery for a long time. The body should be examined for scars and discoloured patches, which are brought about by the long-continued use of a hypodermic syringe. The only certain method of making a true diagnosis is to put the patient in bed in charge of reliable nurses. If urgent symptoms arise, the administration of a dose of morphia will re-establish the mental equilibrium, in the event of the person being a morphia taker. This is true of all drugs, and is a useful method of confirming a suspected diagnosis.

Prognosis.—When the habit is begun early in life, and in an individual with an unstable inheritance, the prognosis is not good. If the patient is in good health and is willing to be treated, many cases do well, but many relapse even when the habit has been broken for some months.

Treatment.—The treatment may be divided into—(*a*) *prophylactic*, (*b*) *curative*. (*a*) Medical men should be exceed-

ingly careful not to give morphia for ordinary ills and pains. Women will often ask for it to relieve uterine pain or neuralgia of all sorts; such requests should be definitely refused, and a decision once given should be adhered to in spite of all entreaty. If an urgent condition demands that morphia should be given, the patient should not be told what drug he is taking; and if by any chance this is found out, the patient should be clearly warned as to the risk of its continued use. (*b*) The curative treatment can only be undertaken if the patient is willing to place himself under care, or in the event of his becoming certifiably insane. The first thing to do is to find a reliable house and trustworthy nurses, and this is by no means easy, as any laxity may interfere with successful treatment. Patients will bribe nurses to procure morphia for them, and for this reason too great care cannot be taken in selecting the nurse. Complete isolation is requisite, and every parcel or letter must be opened by the nurse in the presence of the patient.

There are three methods of withdrawing the drug: either at once stopping it completely, rapidly withdrawing it, or gradually withdrawing it in steadily decreasing doses. The complete or rapid withdrawal is by far the best way when possible, but in many feeble patients it is too dangerous, as fatal collapse may take place within thirty-six hours. Each case must be decided on its own merits. Under any circumstances the patient must be put to bed. Good, supporting, and nourishing diet must be given. Alcohol is nearly always required. Abstinence symptoms may occur within the first two days after withdrawal. Insomnia and intense restlessness are common; the patient may become very agitated, and even acute excitement may supervene. Diarrhœa may be a trying symptom, and, if severe, requires treatment. Cramps and violent pains occur in severe cases. Sudden heart failure and fatal collapse may take place without any warning. Warm baths at night will be found very soothing to patients who are very restless, and sleep can frequently be induced in this way. Hypnotics may be necessary, and some authorities recommend large doses of bromide of potassium. Chloral is not a good drug to use, as it is a serious depressant. If the treatment is successful, the physical health of the patient

begins to improve and sleep comes naturally. It is advisable to keep the patient under supervision as long as possible.

Cocainism

Cocaine is usually taken in conjunction with morphia in order to allay the irritation set up by the latter drug. It produces nervous symptoms much more readily than morphia, and it is often the addition of cocaine that causes morphia takers to become insane.

Ætiology.—The ætiology is very similar to that of morphia. Cocaine is taken either hypodermically or in the form of snuff or wine to allay pain and discomfort, and by some patients to prevent the feeling of hunger. It is a costly drug, and its use is therefore confined to the wealthier classes.

Mental Symptoms.—It creates a mild mental excitement with a sense of increased vigour. In large doses it often produces acute delirium. With prolonged use there is a general failure of both mental and physical power. The patient becomes talkative, and writes innumerable letters. He is often overbearing in his manner, and wild in his conversation. As time passes he becomes suspicious and irritable, and his memory and power of attention fail. Without any warning vivid hallucinations may appear. He sees and hears things which terrify him. A common symptom is the sensation of rolling sand under the skin; this may be misinterpreted into electrical currents, or bring about the belief that there are insects all over the body. The patient more and more distrusts his relatives and friends, and may carry firearms and knives to protect himself. Slowly delusions of persecution are evolved, and the man becomes a source of danger to himself and the community. These patients ought to be placed under care as soon as possible.

Physical Symptoms.—There is a great disturbance of general nutrition, with rapid loss of body weight. The appetite is bad, and there are dyspeptic symptoms, together with constipation. The eyes are sunken. The muscles become wasted and tremulous. Convulsions may occur. The circulation becomes more feeble, and there is a tendency to syncope. Albuminuria is found in some cases. The patient is sleepless,

and more and more relies on the drug to obtain relief. Sexual power fails, but from time to time there may be outbursts of sexual excitement.

Course.—As soon as mental symptoms appear, if the cocaine is not stopped, the patient rapidly becomes very insane. He usually makes wild accusations of all kinds against his friends. His emotional state varies from that of exaltation and excitement to dejection. Finally, he becomes a dangerous member of society. Under treatment the urgent symptoms soon pass off, and the withdrawal of cocaine is usually less acutely felt by the patient than that of morphia. In time recovery may take place, but there is always a danger of some of the delusions of suspicion persisting.

Prognosis.—In mild cases the prognosis is fairly good, but if the habit is of long standing, complete recovery is not common.

Treatment.—The treatment is in every way similar to that described under Morphinism. As a rule it is more often necessary to place the patient under certificates as a person of unsound mind. Strychnine is a useful drug in the treatment of cocainism.

Plumbism

The toxic effects of lead on the nervous system are well known, and are fully described in text-books on medicine. From time to time cases of insanity occur in which the exciting cause is lead-poisoning; this form of mental disorder is called by several names, such as *lead encephalopathy* or *saturnine encephalopathy*.

Ætiology.—Usually the intoxication is of a chronic nature, produced by working in lead, or drinking water contaminated by lead. Savage records a case in which the free use of a lead lotion on a large open wound induced lead-poisoning and subsequent insanity.

Mental Symptoms.—The physical symptoms usually appear before the mental disturbances. It is very rare for insanity to develop without some premonitory symptoms. These latter consist of insomnia, headache, and terrifying dreams. Hallucinations especially of the visual type begin to appear at night. The patient slowly becomes confused, and ideation is

slow; sooner or later he shows signs of restlessness. As time passes, the excitement becomes more marked, and may lead to wild delirium. Auditory and visual hallucinations terrify the patient. The excitement may diminish, but is usually followed within a few hours by an accession of furious mania. There is great confusion of thought, and the memory is uncertain. Delusions of persecution may develop. The mental state may be that of coma, which may be complicated with convulsive seizures.

Physical Symptoms.—The physical symptoms are usually well marked, and as a rule appear before any signs of mental disturbance. They consist of colic, blue lines on the gums, stomatitis, wrist-drop, tremors, peroneal paralysis, &c. Food is frequently refused. Convulsive seizures may occur. Vision may be lost temporarily or permanently.

Course.—Some cases of insanity, due to lead poisoning, closely resemble general paralysis of the insane, and care must be taken not to confuse the two diseases. As soon as the poison is withdrawn, the patient usually makes rapid progress towards recovery. A certain percentage do not quite regain their former mental vigour, but remain more or less intellectually weak. In fatal cases either coma or severe convulsions supervene; a few succumb to exhaustion following the intense excitement.

Diagnosis.—The diagnosis ought not to be difficult if the patient is examined carefully for physical signs of lead-poisoning. Errors may occur by mistaking the case for one of general paralysis, but the history and somatic symptoms should render a proper diagnosis possible.

Prognosis.—The prognosis is usually favourable if the case is of recent origin. When coma or convulsions supervene, the outlook is not hopeful.

Treatment.—The treatment is similar to that of general lead-poisoning. A supporting diet should be given.

CHAPTER XIV

GENERAL PARALYSIS OF THE INSANE

General Paralysis of the Insane is now frequently known by the name of Dementia Paralytica. It is a disease of the nervous system, and is not in the ordinary sense of the word an insanity. The patient becomes insane because the damage done to the brain by the disease is so severe that mental disorder results. Whatever the cause, whether it is cerebral tumour, laceration, or the like, if the injury to the cerebral structures is extensive, mental disorder will supervene. In some cases of general paralysis the mental change is nothing more than a progressive weakening of intellect, whereas the physical symptoms may be numerous and severe. Insanity must be looked upon rather as a complication of general paralysis, though undoubtedly a common complication, for in some patients who die from this disease the mental symptoms are never so acute as to require any very special treatment. On the other hand, mental disorder of a very acute kind is frequently met with in general paralysis, and it may be the symptom which calls most urgently for treatment. There is no special form of mental disorder peculiar to this disease, and therefore the insanity does not assist us in the diagnosis. To sum up, general paralysis may be looked upon as a progressive nervous disease, characterised clinically by progressive mental and physical deterioration.

Ætiology.—This disease is most common between the ages of thirty and fifty years, but it may occur either earlier or later in life. The male is much more prone to it than the female in the ratio of five to one. General paralysis is almost unknown among the uncivilised races, and it is very rife in the highly civilised nations. Large towns and manufacturing centres furnish most cases of the disease. Heredity does not play a very important part in the causation of general para-

lysis, and a large percentage of these patients have no special history of nervous instability in their immediate relatives.

The three important factors which must be considered are syphilis, alcoholism, and sexual excess. During recent years the importance of syphilis as an ætiological factor has become increasingly manifest. Post-mortem, experimental, and clinical evidence, all seems to support this view. A history or other evidence of syphilis is found in about sixty-five per cent. of all cases. The disease commonly develops within twenty years after infection, the average time being about fifteen years. In support of syphilis being a cause of general paralysis, we find that juvenile cases of dementia paralytica almost always have syphilitic parents. Further support to the syphilitic theory is derived from the close relationship between general paralysis and tabes dorsalis, the latter disease being almost universally accepted as a parasyphilitic disease. The Argyll-Robertson pupil, which is one of the cardinal symptoms of dementia paralytica, is now regarded by many neurologists as a sign of former syphilis. Post-mortem evidence of syphilis can be found in a fair percentage of general paralytics.

On the other hand, there are many points against the syphilitic theory, or at any rate against syphilis being the sole factor in the causation. Syphilis is very rife in some countries, such as China, or among Mohammedan peoples, but general paralysis is comparatively rare. Dr. R. N. Johnson, who was out in the island of Barbados, West Indies, tells me that when he was holding appointments at the General Hospital and the Barbados Asylum, he was struck with the small number of patients suffering from general paralysis and locomotor ataxy. He tells me that syphilis is very common in the island, but that dementia paralytica is practically unknown. He further adds that the absence is not due to failure of diagnosis, as most of the physicians hold English qualifications, and in addition are constantly on the watch to discover a case. This evidence of Dr. Johnson is borne out by the experience of other observers. In countries where statistics of syphilis can be more readily collected than in England, it is found that about two per cent. of syphilitics develop general paralysis; this is clearly a low percentage, and points to there being other factors than the purely syphilitic one.

To briefly summarise the points in favour of and against the syphilitic theory—

In favour of syphilis being the cause of general paralysis :

(*a*) A history or other evidence of syphilis is found in a large percentage of cases of general paralysis.

(*b*) The Argyll-Robertson pupil, which is supposed to be a parasyphilitic symptom, is common in general paralysis.

(*c*) The close relationship of general paralysis to tabes dorsalis, another disease in which a history of syphilis is usually obtained.

(*d*) Juvenile general paralytics have syphilitic parents, and the patients show other signs of inherited syphilis.

(*e*) General paralysis is not found in races where syphilis is unknown.

(*f*) German observers have tried to inoculate general paralytics with syphilis, and have failed. (A few recent cases have been recorded where such experiments have been successful in producing a hard sore.)

(*g*) Post-mortem evidence of syphilis is found in many persons dying from general paralysis.

Evidence *against* syphilis being the cause of general paralysis :

(*a*) In certain well-syphilised races general paralysis is almost unknown.

(*b*) The small percentage of syphilitic individuals who develop general paralysis.

(*c*) Thorough antisyphilitic treatment at the time of infection does not avert general paralysis.

(*d*) General paralysis does not respond to mercury or iodide of potassium.

There is no doubt that syphilis is an important factor in the causation of general paralysis, but undoubtedly it is not the sole cause. Can it be that the use of mercury in the treatment of primary syphilis in any way conduces to general paralysis ? It is interesting to note that the latter disease is far more common in those countries which employ mercurial treatment than in those where more general methods are resorted to.

To pass on to the consideration of *alcohol* as an ætio-

logical factor in the production of dementia paralytica. It may be said at once that it is now almost conclusively proved that alcohol *per se* does not produce general paralysis. On the other hand, when associated with syphilis the combination is a dangerous one and very prone to engender the disease at present under review. Great care must be taken not to confuse alcohol as a cause and alcohol as a symptom of this disease. Frequently one of the earliest symptoms of general paralysis is a tendency to drink, and that is equally true of sexual excess, which is the next factor to be considered.

Sexual excess has been held by some authorities to be the primary cause of general paralysis. No doubt excess of this kind does produce symptoms which in many ways closely resemble those found in dementia paralytica, for they are symptoms of severe nervous prostration. Sexual excess leads to nervous and muscular irritability, and the early symptoms of general paralysis are commonly of this type. Nevertheless there are so many objections to this theory that it cannot be seriously entertained; for example, the countries where sexual excess is most rife are not the countries where general paralysis is commonly found. There is no doubt that sexual excess combined with syphilis makes the latter a much more serious disease, and in this way may be the exciting cause which finally determines the onset of general paralysis.

At the present time everything points to the majority of cases of dementia paralytica being brought about by a combination of causes of which syphilis is usually the predisposing unit, and this view is borne out by clinical experience. Though this is true for a large number of cases, it must not be forgotten that from time to time patients are seen suffering from unmistakable signs of general paralysis from whom no such history can be obtained. On this ground it is reasonable to suppose that there is another factor yet to be discovered, which ultimately may be found to be the most potent of all causes in the production of this mortal malady.

Before leaving the question of ætiology, it is necessary to refer to some other points which should be considered under this head. A *head-injury* of a more or less serious nature is not uncommonly met with in the history, and no doubt it must be regarded as an exciting cause. The nervous

system may be in an unstable state, the result of some profound metabolic change brought about by a toxin such as syphilis, and the concussion which the head-injury must of necessity produce may be the starting point of a more active degeneration. Some authorities have attached importance to *sunstroke* as a cause, but if it plays any part it must be a *rôle* similar to that of head-injury. Great or prolonged *mental and physical stresses* may produce profound nutritional change, and in this way probably are powerful elements in the ætiology of general paralysis.

Types of Mental Disorder.—As already pointed out, dementia paralytica is a physical disease, and the mental disorder is merely a symptom and complication. The forms of mental disorder met with in this disease are very varied, and may even alter during the course of the complaint. If the patient lives long enough profound dementia is the termination, so far as the mental aspect is concerned. Some cases show a slow progressive mental deterioration from the very beginning with no emotional disturbances such as depression or excitement. Expansive delirium is a common form of mental disorder during some stage of the disease. It may appear early or late, but in many cases it is entirely absent throughout the illness. The mental aspect may be that of melancholia or hypochondriacal melancholia; a somewhat smaller number of patients exhibit symptoms of excitement, usually of a very violent kind. Patients with prominent delusions of persecution are more rarely met with. Great mental confusion and stupor are occasionally observed.

Prodromal Stage.—General paralysis may first show itself by failure of the intellectual faculties or by some disorder of the sensory or motor apparatus. Nevertheless, whatever the first noticeable symptom may be, on looking back the friends of the patient will certainly state that for a long time previously they have remarked that the mental attitude of the man has been changing. At the risk of being thought tedious, the student may be reminded that the failure will follow the law of dissolution already enunciated, and this law will be followed whether the symptoms belong to the psychical or the physical domain.

First, what are the mental changes? Quite early in the

course of the disease a condition of mental irritability declares itself. The formerly calm nature becomes quick and irritable; the man shows loss of control in words and actions; everything has to be done at once and as he wishes. There are outbursts of temper upon the slightest provocation; instead of being courteous and polite to friends and strangers, the patient's manner becomes rude and overbearing. The memory may be faulty and uncertain, attention and power of application fail. The business man becomes apathetic and indifferent about his work, forgetful of his appointments, and he rapidly loses money; or he may embark on some gigantic scheme, and in this way squander all his wealth. The moral sense begins to deteriorate, the patient may show loss of control by using offensive language, or his actions may be objectionable, and serious breaches of the moral laws may occur. The emotions are frequently in an unstable condition; the man will be hilarious at one moment and weeping at the next. There is commonly a period of over-activity and restlessness, the patient is never quiet for a moment, and his days are spent in a whirl of excitement. Notwithstanding his bombastic and egotistical manner, he is easily swayed by any man who understands his mental state, and knows how to treat him. Some patients are sullen, some depressed, whereas others are merely confused.

While all these changes are taking place in the mental condition of the patient, equally important symptoms may be observed in the physical state. Headache may be an early symptom. Errors in speech and writing may be frequent, and tremors of facial and lingual muscles. The recently acquired accomplishments begin to fail. General and special sensation may be affected, and even definite hallucinations may occur. The pupils frequently become sluggish in their reaction to light, and the consensual reflex may be entirely lost. The knee-jerks are usually affected, and may be exaggerated, diminished, or lost. Convulsive seizures of an epileptic nature may be quite an early symptom, or the seizures may consist of a transitory deafness, blindness, or aphasia. Unilateral convulsions without loss of consciousness are very suggestive of general paralysis. There may be a general failure of nutrition, and the bodily functions may be dis-

ordered. Sleeplessness is a prominent symptom in some cases, whereas in others there is a tendency to drop off to sleep at all hours of the day. In the early stages of general paralysis a single glass of wine may make the patient appear to be intoxicated. This latter symptom is important to bear in mind, as many men have got into serious trouble and have been accused of drunkenness, whereas they were in reality in the incipient stage of dementia paralytica. The prodromal stage may last for several months, and the symptoms are frequently overlooked, until something serious occurs, such as a severe seizure or some alarming mental symptom. Pupillary changes may take place in other maladies, but when there is definite Argyll-Robertson pupil it indicates some serious organic disease, and a reflex iridoplegia must be looked upon as more than a prodromal symptom.

Mental Symptoms.—The mental disturbances already briefly described under the heading of Prodromata gradually become more developed. The symptoms are largely dependent upon the mental type of the disorder. Nevertheless, whatever form the mental disorder may assume, there is one predominating tendency running throughout the illness, and that is progressive deterioration. Frequently there is marked clouding of consciousness, as evidenced by the mental confusion. The general paralytic is like a man in a dream, he loses all power of comparison, his ideas and feelings are so vivid that he accepts them, no matter how fantastic and extravagant they may be. Dissolution clearly shows the scaffolding upon which the mind of man is built: a man believes himself to be the most reasonable animal, but probably after all he is largely guided by his sensations and feelings. This view is corroborated by the case of the general paralytic; he feels strong and believes that he is the strongest man in the world; he feels intensely happy and acts accordingly; whereas another man feels miserable, and believes that he is going to die. The judgment is impaired early in the disease, and there is progressive failure of business capacity.

Memory frequently becomes more and more uncertain, and as the disease progresses the remote memory suffers as well as the more recent. This progressive amnesia is very instructive, for the man first loses power of recall of proper

names and memory for recent events; as time passes ideas in general begin to fail, and the feelings become blunted; he at the same time forgets his nouns and verbs, and interjections only may be retained. Actions become less frequent and more primitive until finally gestures alone are left, and they in turn disappear, and the once reasoning man finally reaches the level of the infant mind, but minus all the potentialities of the latter.

To return: in the earlier stages of the disease illusions of memory (paramnesia) are not uncommon. The patient relates incidents which occur to his mind as if they had been part of his own experience. He will describe in a graphic manner how he led a victorious army across Europe, or how he gained the mastery of the seas by an ironclad that could fly, float, or travel at the bottom of the sea at the rate of a hundred miles an hour. Such a man will talk of his enormous wealth, and in the same breath ask you to lend him sixpence. The restlessness and irritability, which we have already referred to, become very prominent symptoms in some cases. The patient is never quiet for a moment. He is up in the early hours of the morning, and if not controlled may be compromising himself, his family, and partners in business, in some wild scheme. He will write cheques which far exceed his balance at the bank, and not uncommonly purchases property and articles which he neither requires nor can pay for. Telegrams are despatched broadcast, for at first he seldom stops to write, but wires to friends, acquaintances, and strangers. If placed under control, he frequently spends his days in correspondence. He destroys books by writing his letters on the fly-leaf, and lighting his pipe with the other pages. He is very benevolent, and writes cheques for large sums and gives them to comparative strangers. The emotional attitude is one that is constantly changing; the patient may suddenly get into a violent passion, and a moment later may be weeping or laughing.

We will now pass on to consider the various types of mental disorder more in detail.

(1) *The expansive form.*—This is not the most common type, but as it is the classical variety it will be considered first. The mental aspect is one of exaggerated well-being. There is general exaltation with extravagant ideas of wealth, social

position, physical strength, and the like. Whatever these patients do is the best, and no one can equal them in ability. If they sing, their vocal powers are 'superb;' and if a song is suggested, they will treat their audience to a series of discordant sounds, either shouted at the full limit of their respiratory powers, or uttered in a monotone, and closely resembling the singing of a drunken man. In many ways they simulate the intoxicated person both by their manners and speech, and it is not uncommon in the early stages of the disease for them to be accused of drinking.

The delusions are so varied and so extraordinary that it would occupy many pages even to describe a few of them. A man will not be content with the title of Alexander the Great, but will sign himself also Napoleon, Wellington, the Black Prince, King, Emperor, Pope. Another may find that there is no title on the earth great enough for him, and he assumes the position of the Deity. Everything in the world belongs to him, and he looks upon the hospital as one of his palaces. In addition to this exaltation there may be a great amount of excitement and restlessness. The excitement of general paralysis is more acute and unreasoning than that of ordinary mania. All the symptoms of acute mania are present, but in addition there are the physical signs of dementia paralytica. Convulsive seizures are common. Hallucinations of sight and hearing may be present, but they are not very frequently met with.

(2) *The depressed and melancholic form* of general paralysis appears to be increasing in frequency, and is more commonly met with than it used to be. Many of these patients are hypochondriacal, and believe that they are suffering from manifold diseases. Memory and judgment fail, and they become incapable of following their usual occupations. Headaches are a frequent and trying symptom. Sooner or later definite delusions develop, and may be of any kind. Self-accusation is not uncommon. One man will believe that he has typhoid fever; another that his body is decaying, and that his various organs are rotten. At times there is no small degree of exaltation in their misery; a general paralytic, with the idea of bowel obstruction, may believe that his abdomen is filled with thousands of tons of fæces. Food may be

refused, and hallucinations of taste are not uncommon. It is in those cases of dementia paralytica in which the depressed symptoms are most prominent that hallucinations of the various senses are more frequently met with. Some authorities state that hallucinations are rare in general paralysis, and this for the most part is true, but there are notable exceptions, and it would not be safe to reject the diagnosis of this disease because of the presence of hallucinations in any given case. There is usually a greater amount of mental confusion than in the ordinary melancholia, but except for this and the physical symptoms of organic disease the mental state closely resembles acute melancholia. Attempts at suicide are not uncommon, but these patients frequently lack resolve.

(3) *The demented form.*—Progressive dementia is by far the most common type of mental disorder met with in general paralysis. Weak-mindedness is observed at some stage in all types of dementia paralytica, but in this variety of the disease the mental enfeeblement is the chief characteristic from the beginning. The onset is usually gradual, and may be mistaken for neurasthenia. The memory is markedly defective for recent events, and the patients are constantly making mistakes in work that they could formerly do with accuracy. These cases are frequently wrongly diagnosed. Within a few weeks more alarming symptoms may develop, and the patient may shock public decency. He may show irritability, and from time to time there may be outbursts of passion or excitement. Delusions of an exalted kind may now and then be expressed, but they do not form a noticeable feature of the condition. These patients are usually very tractable, and are easily treated so far as the mental aspect of the malady is concerned. They will drop off to sleep during meals or when doing work. Ultimately they become absolutely childish, and sit unoccupied throughout the day.

(4) *The spinal form* of general paralysis is that type of the disease in which the spinal cord is first affected. The early symptoms may closely resemble those of locomotor ataxy, but as a rule the progress of the malady is more rapid than is usually the case in tabes dorsalis, and within a few months mental symptoms develop. Retention of urine or

incontinence are frequently quite early symptoms in this type of general paralysis.

(5) More rarely we meet with *delusional* forms of mental disorder associated with general paralysis. These persons believe that they are the victims of some cruel conspiracy, and state that they are annoyed by a system of persecution. Within a comparatively few months the delusions become less acute, and with increasing mental failure may disappear altogether.

(6) *Stuporous* states occasionally occur, but do not call for any special mention.

In describing the above forms, it is not intended that the student should conclude that there are no other mental types of the disease. Occasionally a case may be seen which does not readily fall under any of the above headings, or the mental state may be an alternating one. When a certain group of symptoms is predominant a case may be classified in a subdivision such as dementia or melancholia, and this is convenient in many ways, especially as regards prognosis and treatment. For example, the depressed types usually run a longer course than the excited forms, whereas, on the other hand, remissions are more frequent in the latter.

To conclude: whatever type the mental disorder assumes in the earlier stages of the disease, the final stage is one of profound dementia. Attribute after attribute disappears until there is nothing left of the former intellect. Mental powers which may have been brilliant are now obliterated, and the man becomes little more than an organism capable of assimilating food. But the physical decay follows closely on the mental, and within a measured time the organic functions upon which life depends fail, and the man dies. Perhaps it is this order of things that makes general paralysis such a painful disease for the relatives to watch. For the malady begins by destroying the whole character of the man, it robs all that is best, and often, for a time at least, it leaves the animal instincts to run riot. No disease exposes the scaffolding upon which man is built in all its bareness in such a way as general paralysis; mortal malady that it is, it were better that it killed outright; but it maims, it lowers man almost to the level of the brute creation, and then, having done its worst upon the higher attributes, it attacks the vital functions.

Physical Symptoms.—Next let us consider the physical symptoms, which are of extreme importance in general paralysis, for it is by them alone that the diagnosis can be made. Like the psychical, they are numerous and varied. The physical signs may appear before the mental disturbances, or *vice versâ*. It will be most convenient to describe each symptom in detail.

Oculo-Motor Symptoms.—Ptosis and strabismus may occur, but are not common. Nystagmus is seen in a few cases, but the chief defects are connected with the pupils. The size of the pupil varies from extreme mydriasis to myosis, the latter being usually the condition in the tabetic forms of general paralysis. Mydriasis is common in the later stages of the disease. Irregularity of the outline of the pupil may be of importance, but as a rule is due to posterior synechiæ. Irregularity in the size of the two pupils should also be noted, but it must not be forgotten that inequality is frequently met with in healthy persons, or it may be caused by some irritation of the cervical sympathetic. It is the failure of the reflex adjustments that is so characteristic of general paralysis. Upon exposure to light the healthy pupil should contract, and this contraction is the result of a reflex action. There is even at the present day no small diversity of opinion as to the exact path of this reflex arc. The afferent fibres run in the optic nerve and probably partially decussate in the optic chiasma, they pass along the optic tract to the corpora quadrigemina, and thence to a special portion of the third nerve nucleus. The efferent fibres pass along the third nerve to the ciliary ganglion, and thence to the pupil by the short ciliary nerves.

Reflex iridoplegia, or Argyll-Robertson pupil, is of great significance, and a symptom of the utmost importance in making a diagnosis. Some authorities consider that an Argyll-Robertson pupil is purely a parasyphilitic symptom, and connotes a former attack of syphilis. Others, and probably rightly, attach much greater importance to the phenomenon, and regard it as pathognomonic of some serious disease, such as tabes dorsalis or dementia paralytica. This loss of light reflex is commonly an early symptom in general paralysis, but it is always present when the disease is at all

advanced. The loss of the consensual reflex may also be noted, and frequently appears among the earlier symptoms. The consensual reflex is tested by alternately covering and exposing one eye; in the healthy subject when one eye is shaded the pupil of the exposed eye dilates. With the Argyll-Robertson pupil the reaction during convergence is usually normal. Accommodative adjustments may be disturbed in general paralysis, but complete failure of the pupil to contract during convergence is not commonly met with until quite late in the disease, and even then it is the exception rather than the rule. There is another pupillary reflex known as the *sympathetic reflex*, which may be affected in dementia paralytica. Normally, when the skin of the neck is pinched or stimulated in other ways the pupils dilate; in general paralysis this reflex may be absent. Primary optic atrophy may be occasionally found in this disease, but it is not common, and when it occurs it is usually in the tabetic form.

Speech-Defects.—The articulatory defects are among the earlier symptoms, and anyone acquainted with the speech in dementia paralytica can almost make a diagnosis from it alone. In its characteristic form the speech is indistinct and drawled; there is a clipping of the last syllables of words, which causes the slurring so commonly noticeable. The patient frequently stops and has difficulty in articulating words, and during these pauses there is marked tremor and over-action of the facial muscles. The chief difficulty is in uttering the linguals and labials, and at times the speech closely resembles that of a drunken man. Many patients fully appreciate the difficulty they have in speaking, and will explain their defects by reference to their artificial teeth not fitting properly. Some general paralytics will not try to talk, as they evidently find difficulty in articulating. Test-words, such as the following, may be tried, but as a general rule it is when the patient is conversing that the speech is heard to the best advantage: 'Biblical commentator;' 'The Irish constabulary extinguished the conflagration;' 'immovability;' 'artillery.' The defects of articulation may always be present, but they are usually more marked immediately after a convulsive seizure. Temporary aphasia is not uncommon, and may be one of the earliest symptoms for which the patient consults a physician.

In the later stages the speech may be so slurred and run together that it is absolutely unintelligible.

Handwriting.—The handwriting may be affected in the early stages of the disease; it is one of the finer muscular adjustments and is of late development, and therefore in dissolution soon loses its highly acquired characteristics. The defects in the handwriting in many ways resemble those of speech; the words are frequently clipped, and the endings are left out; or words or syllables may be reduplicated. The writing also shows muscular failure. The fine upstrokes are tremulous and heavy; letters are separate and uncertainly formed. If the patient uses ink the paper is usually covered with smudges and blots, and the writing sprawls all over the page. As the disease advances the writing becomes thicker, and the difference between the fineness of the up and down strokes is entirely lost. In later stages the weight of the hand on the paper necessitates the use of a pencil in the place of a pen, and finally the patient is totally unable to write at all, or if he attempts to, merely makes hieroglyphics and unintelligible scrawls.

Tremors.—Tremors may be observed in various regions of the body, but they are usually first noticeable in the muscles of the face and tongue. The face shows marked loss of expression, and all the original lines are smoothed and obliterated as the result of the loss of general muscular tone. This smooth expressionless face is very characteristic of the disease, and in addition there is usually a greasy appearance of the skin. When the patient tries to speak or raise his upper lip, tremor appears in the facial muscles, and there is twitching in the muscles of the brow. The tongue at first shows a fine tremor, later a much coarser tremor, and it is protruded with ataxic convulsive jerks. Sucking movements of the lips are common, and in the later stages there may be grinding of the teeth.

Gait.—The gait varies according to the type of the disease. In the tabetic form the gait is commonly ataxic from the first, and the unsteadiness may be observed for some time before other symptoms appear. In these cases the Rhomberg symptom is usually present. In the majority of patients with general paralysis the gait is normal during the initial stages,

but after a few months unsteadiness is noticed when the patient attempts to turn suddenly. Later the movements become slow and shuffling, the legs are separated, and the body is bent and sways about when the patient tries to walk. Finally, he is totally unable to walk even with assistance, for, as the name indicates, there is progressive weakening of all the muscles of the body.

Knee-Jerks.—The knee-jerks may be exaggerated, diminished, absent, or unequal on the two sides. The exaggerated knee-jerk is the most common, and may be a symptom throughout the illness, or after a few months may become diminished or lost altogether. Exaggerated knee-jerks may be found in many persons, notably those suffering from neurasthenia and fatigue-states, and too much importance must not be attached to the symptom if it is not associated with other indications of organic disease. In the tabetic form of general paralysis the knee-jerks are absent.

Seizures.—Convulsive or paralytic seizures are very common in dementia paralytica, but it must be borne in mind that they are not limited to this disease. The most common seizures are: (a) *epileptiform*; (b) *apoplectiform*; (c) *simple paralytic or syncopal attacks.* In addition to these, and more especially in the early stages of the illness, the patient may suffer from transitory attacks of aphasia, deafness, or blindness, which last from five minutes to a quarter of an hour, and when they occur they are very characteristic of the malady. They are not uncommonly quite one of the earliest symptoms which attract notice.

(a) *Epileptiform Seizures.*—In many ways when fully developed these seizures are almost identical with those of epilepsy. There is no cry, and the onset is not quite so sudden. They are the most frequent form of fit, but vary greatly in severity and extent. The convulsive twitching may be limited to one side of the body, or it may be bilateral. There may be, and usually is, loss of consciousness, but, on the other hand, the patient may retain consciousness throughout the seizure. Fits may occur singly or in series, and if several take place in sequence the patient may regain consciousness between the seizures or remain in an unconscious state throughout. In the latter case the fits may follow each other so rapidly that

the condition is one of status epilepticus, and while in this state over a hundred fits may be registered. The fit may begin in one limb and rapidly extend over the body, the eyes and head deviate to one side, and the pupils are usually dilated. The tonic stage lasts for about thirty seconds, and is at once followed by the clonic spasms, which may continue for some time. In some cases the tonic stage seems to be absent, and the fit is confined to twitching. There is a transient hemianopia after the seizure has passed off, and some patients are aphasic or show hemiparesis; but all these symptoms are temporary.

(b) *Apoplectiform Seizures.*—Apoplectiform seizures are not so common as the epileptoid. In these attacks the face is flushed and the patient passes into a condition of coma. The temperature is often raised; the breathing may be stertorous. In some cases there is no complete loss of consciousness, but merely a profound state of lethargy with paresis of muscles of one or both sides of the body. Following the apoplectiform seizures there may be weakness in some of the limbs, but the paralysis rapidly passes off; outbursts of mental excitement occasionally occur as sequelæ of these 'congestive' attacks.

(c) *Simple Paralytic Attacks.*—Simple general muscular failure may take place without any preceding convulsion. A patient may suddenly lose muscular power and fall off the chair on which he was sitting. There is no loss of consciousness, but merely a muscular collapse. These attacks are frequently looked upon as slight attacks of syncope, but in reality they are nervous in origin and not cardiac.

Temperature.—The temperature of the body should always be taken in all cases of general paralysis, as frequently it is a useful index of approaching trouble. There is not uncommonly a rise of temperature a few hours before a 'seizure.' There may be hyperpyrexia after a series of epileptiform fits or following an apoplectiform attack. The temperature may vary on different sides of the body, and is usually higher on the paralysed side. A rise of temperature in general paralysis may be the only indication of the onset of some intercurrent malady such as pneumonia.

Disorders of the Muscular Sense.—The muscular sense is frequently very defective in dementia paralytica. Not only is

the patient uncertain in his power of localisation and in gauging the amount of movement, but he frequently has disordered sensations which lead him to believe that he can 'fly' or 'lift enormous weights.'

Disorders of Sensation.—Sensation is not always disordered to any great extent in the early stages of the illness. Where alcohol has been a prominent factor in the causation, disorders of sensation are common, and this is also the case in many of the patients with tabetic symptoms. In the later stages sensation is usually very defective, and a patient has been known to hold his hand in the fire without suffering any acute pain. The loss of sensation is also shown in those patients who may have severe retention, and yet complain but little of the discomfort felt owing to the distended state of the bladder. Further, patients will leave their feet against a hot-water bottle until severe burns or blisters result, or will lie in one position for a long time until bed-sores form. It is this disorder of sensation that in a large measure makes the nursing of general paralytics so difficult, as the attendant has to be ever on the watch to prevent accidents happening. The disorders of sensation may be so severe that the patient loses the idea of his own identity, and may speak of himself in the third person, or as something else altogether. As previously mentioned, hallucinations and illusions are not so common as in some other forms of insanity, but they are present in about thirty-five per cent. of all cases.

Genito-Urinary Symptoms.—Sexual desire is frequently excessive in the earlier period of the disease, but sexual power is, as a rule, lost. In the initial stages there may be retention or incontinence of urine, and it may be on account of this difficulty that the patient first consults a physician. This condition may be only temporary, and within a short time full control is regained. Here a word of caution to the unwary. In these cases of early retention, using the catheter twice a day may not be frequent enough, as many of these patients secrete urine at a very rapid rate, and within a few hours several pints of urine may collect in the bladder. In the later stages of the disease retention may be a trying symptom, and it usually is accompanied by constant dribbling, which increases the difficulties of nursing and the prevention of bed-sores.

Gastro-Intestinal Symptoms.—The appetite is frequently excessive, and the patient is inclined to 'bolt' his food. For this reason great care must be exercised by the nurse in charge, as the patient may choke himself, especially if subject to seizures. In the later stages of the disease minced food should always be ordered, and the attendant should see that the patient has swallowed one mouthful before the next is given. Vomiting is not an uncommon symptom in dementia paralytica; it may be brought about by the patient taking some indigestible food, or by chewing tobacco or leaves from the garden. Some general paralytics suffer from this symptom periodically, and as no very apparent cause can be discovered, it must be looked upon as nervous in origin. Hæmatemesis is occasionally seen, and in this way the patient may lose large quantities of blood. The bowels are frequently constipated, and usually require very regular attention throughout the illness. In the later stages all power over the sphincter ani is lost.

Circulatory Symptoms.—In the earlier stages, when the symptoms are those of excitement, the pulse is usually soft, low-tensioned, and frequent. In those patients who are depressed the blood-pressure is raised and the pulse slow. In the later periods of the disease, no matter of what type the insanity may have been, the blood-pressure is always low-tensioned.

Respiratory Symptoms.—It is only towards the termination of the disease that the respiratory system becomes involved. Hypostatic pneumonia is a common complication, and in many cases is the actual cause of death.

General Nutritional Changes.—In the earlier periods of the illness the patient not uncommonly loses weight; this is especially the case in the more excited forms of the disease. Within a few months body weight begins steadily to improve, and the patient may become stout, and at times unhealthily so. Sooner or later once again a rapid loss of weight occurs, and as months pass the emaciation becomes very marked. No amount of nourishing food prevents this taking place, and the progress is one of steady nutritional failure. Trophic changes take place in all the tissues of the body. The skin becomes unhealthy-looking, and pustules or small superficial abscesses may form. Herpes zoster is not uncommon. The

hair and nails become brittle. The bones show increased fragility, and slight injuries may cause severe fractures, the ribs being very liable to break. Hæmatoma auris is among the more common trophic changes that are met with in this disease. In the final stage great contraction of the limbs usually takes place.

Juvenile General Paralysis.—General paralysis may develop in young persons, and in most respects it follows the same course as it does in the adult. Mott has made a full examination of twenty cases with sixteen autopsies, the account of which will be found in Volume I. of the 'Archives of Neurology.' He states that the average age of onset is seventeen years, the female being attacked somewhat later than the male. A history of hereditary syphilis is to be obtained in the great majority of cases, and if this is not always possible usually clinical symptoms of congenital syphilis are to be discovered in the patient. Some authorities state that a neuropathic inheritance is also an important ætiological factor. Cases are recorded in which the father of the patient had general paralysis. Juvenile general paralysis is more common and runs a more rapid course in the male than in the female. Puberty and head-injury are the most frequent exciting causes. In many cases the sexual organs are not fully developed. The catamenial periods may never have appeared, but if they have done so they immediately cease when the illness begins. Many of these patients will be found to have exhibited signs of mental weakness for some years prior to the full development of the paralytic symptoms, and may never have been capable of doing work. Progressive dementia is the most common type of mental disorder occurring in juvenile general paralysis. Delusions of grandeur are decidedly rare. The ordinary physical symptoms, such as tremors of face and tongue, slurred speech, pupillary changes, handwriting affections, &c., can usually be observed. Convulsive seizures are not common, and when they do occur are usually mild in character. The morbid anatomy changes are similar to those which are found in the adult.

Course.—General paralysis has been divided up into three stages; and although this arrangement may be convenient for the student, it is nevertheless at times confusing in the actual

clinical observation of the disease. For example, it is not uncommon to find a patient rapidly pass through the first and second stages, and even apparently reach the third and final stage, and then improve and return to the first stage, or have a complete remission.

Notwithstanding this difficulty, there is much to be said in favour of retaining the systems of division into the three stages, as it is certainly helpful to those first studying the disease. (*a*) The first period is that of slight inco-ordination and failure of the finer muscular adjustments, such as speech and handwriting, slight tremors, and mental failure, which is usually accompanied by exaltation, excitement, or depression. (*b*) The second period is that of greater muscular inco-ordination, with a tendency to become fat and gross, with a greater liability to seizures, and more advanced mental deterioration. (*c*) The third period is that of extreme muscular failure, with tendency to contractions, progressive emaciation, loss of power over all sphincters, and mentally a condition of profound dementia. Thus it will be seen that the course of general paralysis is one of steady and progressive mental and physical deterioration. Although this is ultimately the true course of events in a fair proportion of cases, the progress of the disease appears to stop for a time, this improvement varying from a few weeks to several months. During this period of quiescence the patient may enjoy apparent health, and the term *remission* has been used to connote the condition. This subject will again be referred to in a subsequent paragraph.

The course of general paralysis may be a very rapid one, and the patient may die within a few months of the establishment of the disease. More commonly the course is a longer one, varying from two and a half years to four years, or even more. The cases with mild expansive delirium usually live the longest, and the course is, as a rule, longer in women than in men. Occasionally a general paralytic may live ten years or even longer. The causes of death vary in different cases, but the following are the most frequent: (*a*) exhaustion, (*b*) status epilepticus, (*c*) pulmonary disease, (*d*) cystitis and kidney disease, (*e*) heart failure.

Remission.—In some cases of dementia paralytica all symptoms, both mental and physical suddenly begin to clear

up; the improvement may be rapid or steady, and may be partial or complete. As a rule the pupillary symptoms persist. The general paralytic with expansive delirium or excitement is more likely to have a remission than the depressed or demented. The remission usually occurs in the early months of the disease, and may last from a few months to a year, or occasionally longer. During the remission the patient is frequently capable of doing work, and often good work. Nevertheless, his acquaintances usually notice that the man's character is altered; he may be more facile to get on with, but he is easily fatigued mentally. Some patients are inclined to be irritable, or extravagant with money. It is very important to warn relatives that a patient with general paralysis may have a remission, otherwise when it takes place they may blame the physician for having told them that the patient was suffering from a mortal malady, and for having given them to believe that he would not be fit for any more work. It is seldom that a patient has more than one remission during the course of his illness.

Diagnosis.—The diagnosis of general paralysis must be made almost entirely from the physical symptoms. Pupillary defects, disorders of speech, tremors, seizures &c. are the symptoms which will assist most in making an accurate diagnosis. Rapid failure of memory and marked change of character, with tendency to extravagance, &c., in a man between thirty and forty-five may suggest dementia paralytica, but unless some physical signs of the disease are to be discovered the final decision must be postponed for a time. The following are the disorders that general paralysis is apt to be confused with: (*a*) alcoholic insanity, (*b*) neurasthenia, (*c*) mania or melancholia, (*d*) chronic delusional insanity, (*e*) syphilitic insanity, (*f*) cerebral tumours, (*g*) epilepsy, (*h*) locomotor ataxy, (*i*) senile dementia.

(*a*) The differential diagnosis between alcoholic pseudo-paralysis and dementia paralytica has been fully described in the chapter on alcoholism, and the reader is asked to refer to what has already been written on this difficult and important subject.

(*b*) The symptoms in neurasthenia may closely resemble some of the early symptoms of general paralysis. The neura-

sthenic may hesitate in his speech when nervous, and there may be tremor of the facial muscles when speaking; but he is usually aware of his condition, and is constantly trying to get relief, whereas the general paralytic does not realise that he is ill. Seizures or Argyll-Robertson pupil strongly favour general paralysis, and are never present in neurasthenia; in the latter the pupils are dilated and active. Further, the neurasthenic does not lose his moral sense, and his memory is never seriously defective.

(*c*) It is frequently necessary to distinguish between general paralysis and mental disorders, such as mania and melancholia. No absolute diagnosis can be made until the physical signs of organic disease appear. The excitement of ordinary mania is not so unreasoning as that of general paralysis. The mental deterioration is greater in the latter disease. In mania and melancholia the memory is never really bad, as it may be in dementia paralytica, and hallucinations are more common in these disorders. Speech-defects, and failure of muscular power, altered handwriting, pupillary changes, and seizures, all point to general paralysis.

(*d*) In chronic delusional insanity the onset is very gradual, and its course is a slow one; delusions of grandeur are usually of late development. The delusions gradually become organised, and there is a total absence of any physical signs of organic disease. Hallucinations are more common in the true delusional state.

(*e*) Syphilitic insanity, the result of syphilitic disease of the brain, is a comparatively rare complaint, but when it occurs it is frequently very difficult to distinguish from general paralysis. Local paralyses favour syphilitic insanity. In the latter disease a third nerve palsy is common, and headaches are usually very severe. Optic neuritis would point to syphilitic disease, as it is seldom seen in general paralysis. An Argyll-Robertson pupil is of little value as a diagnostic sign, for it occurs in both diseases, and this supports the theory that a reflex iridoplegia is a parasyphilitic symptom. Tremors are seldom present in syphilitic insanity. Speech-defects favour general paralysis, as aphasic states are the only form of speech-disorders met with in syphilitic insanity. The mental state of the syphilitic patient is usually one of

depression with a tendency to become gradually weak-minded. The important point to remember is that with antisyphilitic treatment the patient with syphilitic insanity often rapidly improves, whereas such treatment is valueless in general paralysis. Notwithstanding the improvement which takes place in the syphilitic patient, there is a great tendency to relapse, and the course is a long one. In the case of general paralysis the progress of the disease is one of steady deterioration, and one remission is the most that can be looked for. Time alone may clear up the diagnosis, but it is helpful to remember that syphilitic insanity is a comparatively rare disease, and general paralysis is common.

(*f*) Cerebral tumours in some cases may resemble general paralysis, but as a general rule the differential diagnosis is not difficult. The mental symptoms are usually of late development in intra-cranial tumours, and the localising symptoms of the latter generally precede them. Optic neuritis, intense headache, and vomiting, strongly favour tumour. The mental state of the patient with cerebral tumour is that of progressive dementia with marked loss of memory. The usual physical signs of general paralysis are mostly absent.

(*g*) It is very rare for true epilepsy to begin after the age of thirty years, and there ought to be no difficulty in distinguishing this malady from general paralysis, as the history and symptoms of the two diseases differ greatly.

(*h*) A patient with tabes dorsalis may ultimately develop general paralysis, and many neurologists now look upon locomotor ataxy and dementia paralytica as the same disease. In favour of this view are the following points: (1) Syphilis is a common factor in both; (2) cases of juvenile tabes and juvenile general paralysis have syphilitic parents; (3) a certain number of cases of general paralysis present tabetic symptoms during life, and at post-mortem show sclerosis of the posterior column of the cord or posterior roots; (4) a few cases of tabes have been recorded that developed symptoms of general paralysis later; (5) the clinical symptoms of the two diseases are alike, ocular paralysis, &c.; (6) the most important physical sign of tabes dorsalis is reflex iridoplegia, and this is also one of the most important physical signs of general paralysis; (7) Mott considers that the pathological condition is identical

in that it is a primary degeneration of the neuron and secondary sclerosis; (8) the age of onset of both diseases is about the same.

Against tabes and general paralysis being the same disease, we have the following points: (α) the rareness of mental symptoms in tabes; (β) it is the exception rather than the rule for tabes to end in general paralysis; (γ) the slow progress of the disease in tabes, and the rapid course in dementia paralytica. This latter objection is explained by the fact that in tabes dorsalis it is the spinal cord that is attacked, whereas in general paralysis it is the cortex cerebri, a much more important structure. The time has not yet come when it can be definitely stated that tabes dorsalis and general paralysis are identical diseases, but the evidence is such that it strongly favours such a conclusion.

(i) When general paralysis appears late in life, it may be necessary to diagnose it from senile dementia, especially when this latter condition is associated with any paralysis or speech-defect. The course of senile dementia is slower, and there are usually no pupillary changes; and further, if there is any weakness, it is a localised weakness. The changes in speech are different in the two diseases, for in senile dementia the patient is either permanently aphasic, or the speech is merely blurred and thickened, and quite distinct from the slurred tremulous articulations of the general paralytic. To conclude: the diagnosis of dementia paralytica is often overlooked in the early stages of the disease because physicians do not examine the patient carefully enough for physical signs, and too frequently make their diagnosis from the mental symptoms alone. Dementia paralytica is so common a malady that the possibility of its being present ought always to be considered in every case of insanity, no matter what the type of mental disorder may be.

Prognosis.—The prognosis is hopeless, and most patients die within three years from the time that the disease becomes established. A remission may occur, but it is only a temporary improvement. In some rare cases the disease lasts over an extended period of years.

Pathology and Pathological Anatomy.—The pathology of general paralysis has been a subject which has received great

attention during the last twenty years, and notwithstanding that much of importance has been discovered regarding the disease, we are still uncertain as to its true cause. As we have already pointed out, syphilis seems to be a factor in the antecedent history of a large number of the cases of dementia paralytica, but it is clearly not the sole cause, and in some cases it seems to be absent altogether. Authorities have long disagreed as to the actual nature of the disease. Some have regarded it as primarily a chronic inflammatory change either of the meninges or cortical structures, and for this reason the term *chronic meningo-encephalitis* has been given to the malady. Some state that the condition is primarily a degeneration of the neuron, and that all other changes are secondary. Others hold that the initial changes take place in the interstitial tissues of the brain, and that it is only in the later stages of the disease that the nervous elements become affected. Others believe that it is the cerebral blood-vessels which are primarily diseased, and that this in turn leads to extensive nutritional alteration in the neuron and other structures supplied by these arterioles. A small number have advanced the theory that in reality the disease is nothing more than an early and premature senility.

The tendency at the present time is to look upon it as a toxic condition, and this view is supported by the fact that, although the nervous elements are the structures which are most severely affected, changes take place in all the tissues and organs of the body. Thus it will be seen that at different times general paralysis has been regarded as a primary degeneration or inflammation of the parenchymatous or an inflammation of the interstitial elements of the brain, a primary inflammation of the pia-arachnoid, or a disease of the blood-vessels. There is no doubt that all the structures of the brain finally become involved in the disease, but it is by no means easy to locate the site of the earliest changes or to indicate their nature. It may be that in some cases they appear in the parenchymatous elements, in others in the interstitial structures or blood-vessels, and that this accounts for the different clinical types of the disease. It has long been felt that under the name of general paralysis we probably include other diseases which closely resemble it, and in time we hope to be able to

differentiate between them. By the process of elimination certain pseudo-paralyses have already been withdrawn and placed in other groups; no doubt in time others will also follow.

To return: the theory that the disease is primarily an inflammatory one, in which the coverings of the brain, or the brain itself, are chiefly involved, is not supported by post-mortem evidence. In patients dying in the earlier stages of the malady, little or no disease of the meninges can be found, whereas in the later stages they clearly become involved, thus indicating that the change is probably a secondary one. Mott has strongly supported the theory that the primary change in general paralysis is a degeneration of the neuron. This view was originally adduced by Tuczek, and at the present time it is advocated by many observers. Mott states that general paralysis 'is a primary decay of the neuron itself with secondary inflammatory changes affecting the vessels, lymphatics, and membranes, due to the irritation of the products of degeneration.' He regards the disease as a premature failure of the specific vital energy of the neuron, for he writes 'that it is a premature decay of tissue in which inherited and acquired conditions take part, with the result that progressive decay of the latest and most highly developed nervous structures ensues as soon as their vital energy is unable to cope with the antagonistic influences of environment.'

Ford Robertson contends that there is no conclusive evidence of this view, and considers that Mott has weakened his position by advocating that general paralysis and locomotor ataxy are one and the same morbid process affecting different parts of the nervous system. He writes:[1] 'There may as yet be no evidence that serves to exclude the possibility that general paralysis is essentially a premature failure of the specific vital energy of the cortical neurons, but there is proof that tabes does not depend upon a similar morbid condition of the sensory proto-neurons. It is now a well-recognised fact that the nerve cells in the posterior root-ganglia, which are the trophic centres of these neurons, are not necessarily affected by morbid changes in the latter disease.' Ford Robertson, in another paragraph, when speaking of the

[1] *Pathology of Mental Diseases.*

pathogenesis of general paralysis, writes: 'My own studies upon the subject incline me to regard the auto-toxic theory, in the special form in which it was advanced by Angiolella in 1894, as the hypothesis in favour of which the strongest case can at present be made out.' Later in the same chapter he briefly summarises his views on this subject as follows: 'The disease depends upon an occurrence of a general toxic condition, the exact nature of which is still obscure, but which is certainly in many cases the result of antecedent syphilitic infection. The first important effect produced by the toxins is a proliferative and degenerative change in the walls of the vessels of the central nervous system, including those of the capillaries of the cerebral cortex. This alteration in the capillary walls interferes in various ways with the nutritive exchanges between the blood and the cerebral tissues. Consequently the adjacent cortical neurons undergo primary degeneration, and the neuroglia also tends to suffer certain morbid alterations.' Bevan Lewis believes that the change is primarily an inflammatory one. Space does not permit us to go further into this vexed question of the pathogenesis of this disease, and we must now pass on to study the macroscopical and microscopical changes which are found in the brain and elsewhere.

Macroscopic.—The skull-cap is generally thickened, and the diploë is obliterated. The dura mater is thickened, and more or less extensively adherent to the calvarium. A blood-clot partially or wholly organised may be found on the under surface; some persons look upon this false membrane as the result of hæmorrhagic pachymeningitis. This sub-dural false membrane is usually situated on the vertex, and varies in thickness from a thin rust-coloured fibrinous layer to a thick tough membrane. It is probably produced by a degenerate vessel rupturing; the clot which is thus formed becomes organised, and new vessels form, which in turn become degenerate and rupture, and each time this occurs a new layer is added to the existing membrane. The Pacchionian bodies are increased in size. The pia-arachnoid is thickened and œdematous, and shows scattered milky opacities. Pia is adherent to pia between the hemispheres, but not, as a rule, between the sulci. The pia-mater is abnormally vascular, and is adherent to the convolutions,

especially in the frontal and parietal regions. When any attempt is made to strip the pia-arachnoid from the surface of the brain, a lacerated surface is often left at the summits of the convolutions. This condition is most marked in those patients who die in the earlier stages, whereas in the later stage the pia-arachnoid strips almost too readily.

The convolutions are atrophied, and the grey matter is thinned, especially in the frontal and parietal regions, and the whole brain is softened; these changes show themselves microscopically in tortuosity of the radiations. The ventricles are dilated. The ependyma, especially of the fourth ventricle and the walls of the lateral ventricles, is usually studded with granulations, which give rise to the frosted appearances commonly referred to. The cerebro-spinal fluid is always greatly increased in quantity, and is somewhat more opaque than normal. There is a large increase of the proteid matter, and cholin is usually formed in the fluid; pyrocatechin, which is normally present, is absent.

The importance of the presence of cholin in the blood has lately been discussed. Mott suggested that it may be the cause of the fatty degeneration that takes place in the various organs of the body, and others have stated that it may be the cause of the epileptic seizures so common in this disease. The author, knowing that Mr. R. W. Allen, Gull Student in Pathology, Guy's Hospital, has lately been working on this subject, asked him if he would write a brief abstract of the result of his investigation, and this Mr. Allen has very kindly done, as follows: 'The destruction of nervous matter leads, as one might expect, to the appearance in the blood and cerebro-spinal fluid of various pathological products. Two of these, cholin and glycero-phosphoric acid, may readily be detected in 10 c.c. of either fluid provided the affection be acute enough, and the amount of tissue destroyed sufficiently great. These conditions are fulfilled in most cases of general paralysis of the insane, often also in locomotor ataxia, cerebral syphilis, disseminated sclerosis, beri-beri, diphtheritic paralysis, rapidly growing cerebral tumours, cerebral abscesses, and a few other conditions. For the detection of the cholin, either Mott and Halliburton's platinochloride or Allen's iodine test may be employed. The presence

of cholin in the circulatory fluids of epileptics has also been asserted by Donath, but probably incorrectly, for these reasons: firstly, the associated destruction of nerve tissue is extremely slight; secondly, the iodine test fails to detect it; thirdly, there is no corresponding increase in the phosphatic acid. It was hoped that this detection of cholin might assist in the diagnosis of early or doubtful nervous lesions; but the results have been rather disappointing on the whole, though occasionally it is undoubtedly helpful; where the nerve change is slight the corresponding amount of cholin set free is also slight, and so may be beyond the limits of the test; these are just the cases where assistance in the diagnosis may be most needed. The close chemical relationship of cholin to neurin, putrescin, cadaverin, and the alkaloids, suggested that perhaps the accumulation of this substance in the circulatory fluids might be responsible for the fits of general paralysis and of epilepsy. Donath asserted that such was the case, but this view is almost certainly wrong, for the following reasons: Firstly, the increase in the cholin in epilepsy, even granting that there is any increase, is much too slight to produce such a symptom; secondly, other conditions, such as diphtheritic paralysis, in which the destruction of nervous tissue may be very great, are not attended by fits; thirdly, assuming the susceptibility of man to the poison to be at all comparable, body weight for body weight, to that of rats and rabbits, injection experiments on these animals clearly show that the immediate destruction of all the nervous tissue of the human body would fail to produce an amount of cholin sufficient to induce convulsions. For in the case of these animals 0·1 gram intravenously or 0·01 gram subdurally is required in one dose to produce this result; a slightly larger dose being fatal from respiratory failure, while somewhat smaller doses may be given every three or four days for months without producing any clinical symptoms other than diarrhœa, salivation, and slight general debility. If after six months of this treatment the animal be killed, not only an extremely slight diffuse degeneration of the nerve-fibres in the posterior root-zone of the dorsal region of the cord is to be detected—the nerve-cells are everywhere healthy, nor is the heart-muscle affected, as some have suggested might be the case. It would

thus appear that in some other direction than cholin must the causation of these fits be sought.'

The total weight of the brain is below normal, and this reduction may be very marked in some cases. Foci of softening may be found scattered about, and are especially noticeable in the cortex. There is also increased vascularity throughout the cortex and white matter.

Microscopic.—The thickening and opaque appearance of the pia-arachnoid are due to proliferation and degeneration of the endothelial lining. Bevan Lewis attributes the morbid adhesion of the pia-arachnoid to the cerebral cortex to an overgrowth of neuroglia. Ford Robertson points out that there are two factors in the production of the normal degree of adhesion: '(*a*) the interlacement and attachment of the glia fibres to the connective tissue fibres of the pia-arachnoid; and (*b*) the blood-vessels which pass from the membrane into the substance of the brain.' He goes on to say that 'there are likewise two factors in the production of an abnormal degree of adhesion of the pia-arachnoid to the cortex: (*a*) increase in the number and strength of the glia fibres; and (*b*) increase of the connective tissue fibres of the adventitia of the vessels.' Ford Robertson considers that it is the vascular factor which is the important one. He further considers, that the eroded appearance of the convolutions observed after the stripping off of the pia-arachnoid is due to softening of the cortical tissues, and in support of this view he states that 'if a normal brain is allowed to soften from post-mortem change, the whole membrane (pia-arachnoid), both in the sulci and over the convolutions, strips off with adhesion and laceration of the cortex, just as occurs near the top of the same convolution in certain cases of general paralysis.'

The small blood-vessels are numerous, tortuous, and frequently distended with blood. Their coats are thickened and show hyaline, fibroid or fatty degeneration. The endothelial nuclei are increased in number, and the perivascular lymph spaces are dilated and filled with exuded leucocytes. Endarteritis obliterans may be seen in some of the vessels. The changes in the nerve-cells vary to a certain extent according to whether the disease runs a rapid or slow course. In the

former condition a greater number of cells show marked morbid alteration, and there is less sclerotic change.

The following are the most common changes to be observed: (*a*) *Chromatolysis*—by this we mean the breaking up of the granules which form the Nissl bodies—in other words, the destruction of the colouring matter of the cell. Chromatolysis is seen in many forms of nervous disorder, and is merely indicative of some disturbance of nerve-cell nutrition. Owing to this destruction of Nissl bodies the perinuclear mass (nerve-cell) does not stain so well as normally. (*b*) *Achromatolysis* is also to be observed, and this is a much more serious condition. By achromatolysis we mean that the fibrils in the cell itself have become degenerate and disintegrated. (*c*) The nucleus of the cell becomes displaced, and is frequently found lying against the periphery of the cell-wall; this displacement is probably due to the achromatic disintegration already referred to. The nucleus is commonly altered in shape, is often triangular and usually stains more readily than normally. (*d*) The nerve-cells at times show fatty degeneration. (*e*) Vacuolation may be observed either in the cell or nucleus. (*f*) The nerve-cell becomes altered in contour, and may be very shrunken in appearance, or even disappear altogether. (*g*) The cell-processes are affected in a similar way to the perinuclear mass, and the cell is frequently found to be separated from its process. There is degeneration of the axis-cylinder, breaking up of the myelin sheath, and proliferation of nuclei in the sheath of Schwann. The dendrons are varicose and atrophied. (*h*) The tangential fibres of the cortex undergo varicosity and atrophy, and finally disappear. (*i*) The changes in the connective tissue elements are as great as those which may be observed in the nervous structures.

With the disappearance of the nerve-cells there is an increase in the neuroglia. This increase may be apparent rather than real, for it may appear relatively greater owing to the absolute deficiency of nerve-elements. Ford Robertson, in his book on 'Pathology of Mental Diseases,' writes: 'The great neuroglia hypertrophy and proliferation—involving the whole of the cortex as well as the white matter—regarded by many authorities as typical of this disease in its advanced stage, I have only found in about one-third of such cases, of

which I have examined sixty-four. A much less marked degree of these morbid changes was present in the large majority of the cases. They were, further, often confined to the outermost layer of the cortex and the white matter. When the nerve-cell layers of the cortex were involved, large areas usually remained unaffected. Several patients, who clinically were beyond any doubt advanced general paralytics, showed no pronounced neuroglia change at all. In three additional early cases the neuroglia was either normal or only very slightly hypertrophied in the outermost layer of the cortex and in the white matter. These observations lead me to support the views of those who have already maintained that hypertrophy and hyperplasia of the neuroglia are secondary and non-essential tissue changes in general paralysis.' On the other hand, whether the changes be primary or secondary, essential or non-essential, there is no doubt that in very many cases the neuroglia cells and fibres show morbid conditions. They are frequently hypertrophied and apparently increased in number. Bevan Lewis looks upon these 'spider' cells or 'Deiter's' cells as 'phagocytes' or 'scavengers of the tissue,' but this view has not been supported by any evidence, experimental or otherwise. (*k*) Degenerative changes may be found in the medullated tracts of the spinal cord, especially in the posterior and lateral columns. They occur likewise in the spinal roots and ganglia. (*l*) The sympathetic ganglia occasionally show nerve-cell and vascular changes. (*m*) Degenerative changes have been recorded in the peripheral nerves. (*n*) Fatty degenerations are found in many of the organs of the body, and atheromatous changes in the vessels.

Treatment.—The treatment of general paralysis is practically confined to the treatment of symptoms. It is a mortal malady, but nevertheless much can be done by alleviating the symptoms. The patient should be at once removed from business, and should be placed under the constant supervision of a relative or valet. Complete rest is absolutely necessary, and a general paralytic ought never to be sent travelling on the Continent. The quieter the patient is kept the more slowly will the disease develop, and the less likelihood will there be of acute excitement supervening.

In treating general paralysis the physician is met by two

PLATE III.

1.—Photograph of the right hemisphere of a case of chronic dementia paralytica, which died after a series of 198 epileptiform convulsions. The figure shows wasting, which is very marked in the pre-frontal region (anterior two-thirds of the first and second and anterior part of the third frontal gyrus); marked in the first temporal gyrus, the inferior parietal lobule, Broca's gyrus, and the lower part of the ascending frontal gyrus, fairly marked in the remainder of the sensori-motor area and the superior parietal lobule and relatively slight in the remainder of the hemisphere, including the orbital surface.

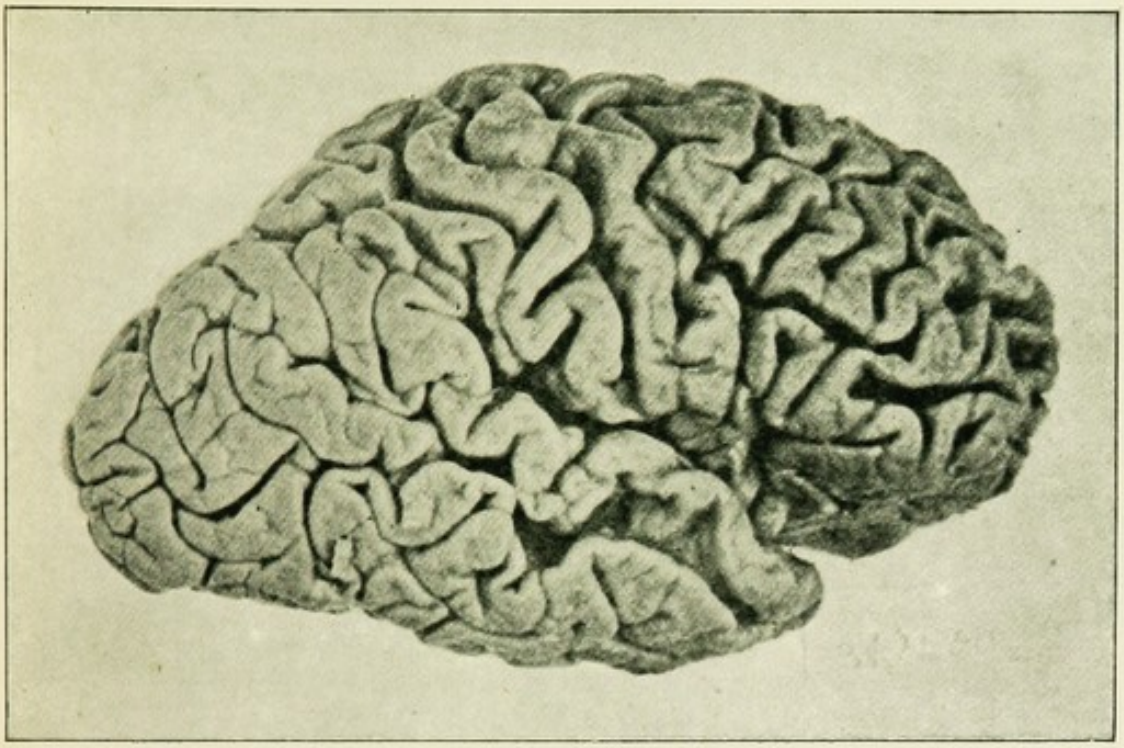
History.—Male, aged 53 years, married 18 years. No children. No family or personal history. In Claybury Asylum suffering from chronic dementia paralytica for nearly three years, during the greater part of which time he was lost to time and place, and wet and dirty in his habits. During the last two years of his illness he had several series of convulsions and eventually died as above stated. Knee-jerks absent. Left pupil larger than right and both inactive to light. Tremor.

2.—Photograph of the left hemisphere of a more acute case of dementia paralytica, which died of chronic tuberculous pneumonia. The figure shows wasting, which is very extreme in the pre-frontal region; extreme in Broca's and the first temporal gyri and the inferior parietal lobule, marked in the rest of the sensori-motor area and the superior parietal lobule; and less marked elsewhere, including the orbital surface of the frontal lobe. Decortication exists in the second temporal gyrus and the pre-occipital region, into which parts the disease appears to be rapidly spreading.

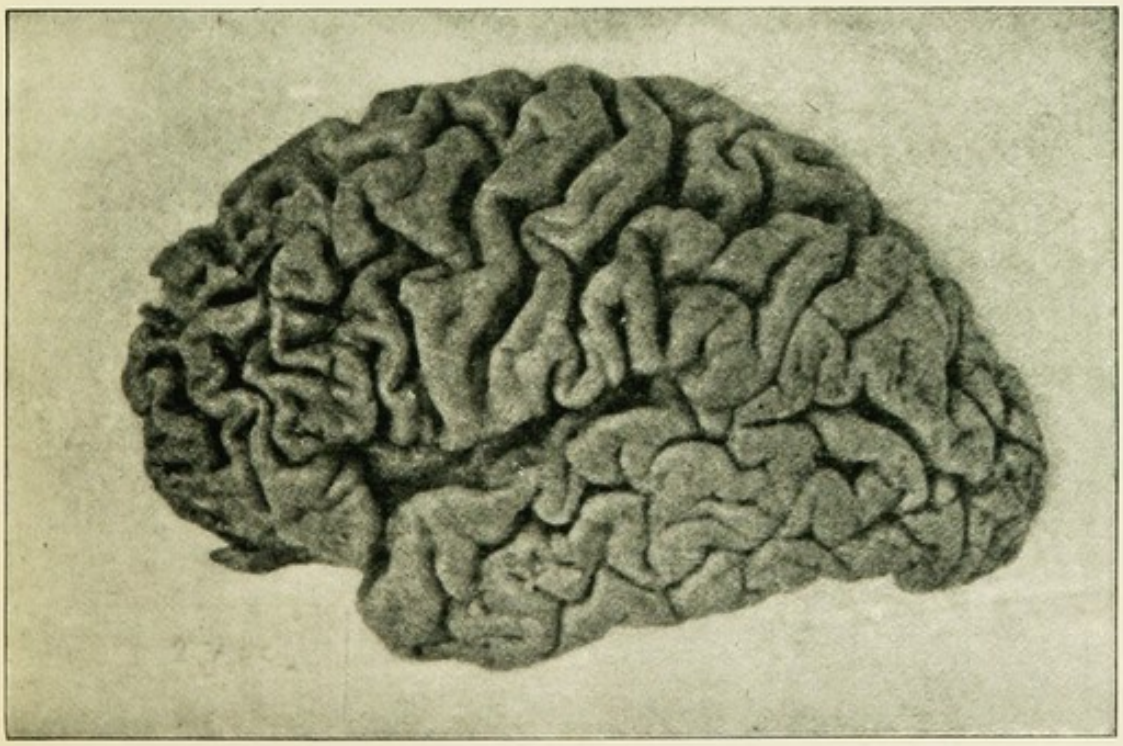
History.—Female, aged 36 years, married. No family or personal history. In Claybury Asylum suffering from dementia paralytica for thirteen months. On admission she was quiet and somewhat lost, she collected rubbish, and she was dirty in her habits. During her residence she had several (chiefly left-sided) convulsions. The pupils were unequal. The right knee-jerk was absent and the left was exaggerated. Facial and lingual tremors. Speech slightly slurred. Died in the last stage of dementia paralytica.

Figures reproduced from Dr. J. S. Bolton's paper on 'The Histological Basis of Amentia and Dementia,' *Archives of Neurology*, vol. ii.

PLATE III.



1.



2.

PLATE IV.

1.—Outer surface of the left hemisphere of the brain of a male aged 41 years. Died of gross dementia paralytica. The duration of the disease appears to have been little, if anything, more than two years. Heredity. Syphilis. The case is unusual in having started with a long series of epileptiform convulsions, after which the patient rapidly became grossly demented. Weight after partial stripping, 475 grammes. The wasting is very extreme in the pre-frontal region, and extreme in the whole sensori-motor region (posterior thirds of the first and second frontal, Broca's, and the ascending frontal gyri), and in the first temporal gyrus, the superior parietal lobule, and the pre-occipital region, but is marked elsewhere. This distribution shows fairly well in the photograph, but is much more clear in the actual hemisphere. The unusually early and marked involvement of the sensori-motor area was evidenced by the long series of convulsions which ushered in the disease. As a rule the first temporal gyrus and the parietal lobules are in gross and chronic dementia paralytica more wasted than the sensori-motor area, though this is not usually visible in ordinary gross dementia. This is probably due to the fact that the wasting in the latter is rarely so rapid and extreme as it is in the former, and consequently the differentiation in dementia paralytica is more likely to be the true one.

Reproduced from Dr. T. S. Bolton's paper on 'Histological Basis of Amentia and Dementia,' *Archives of Neurology*, vol. ii.

2.—Photograph of the two hemispheres cut horizontally in nearly the same situation. The marked atrophy of the left and the dilatation of its ventricle are very obvious.

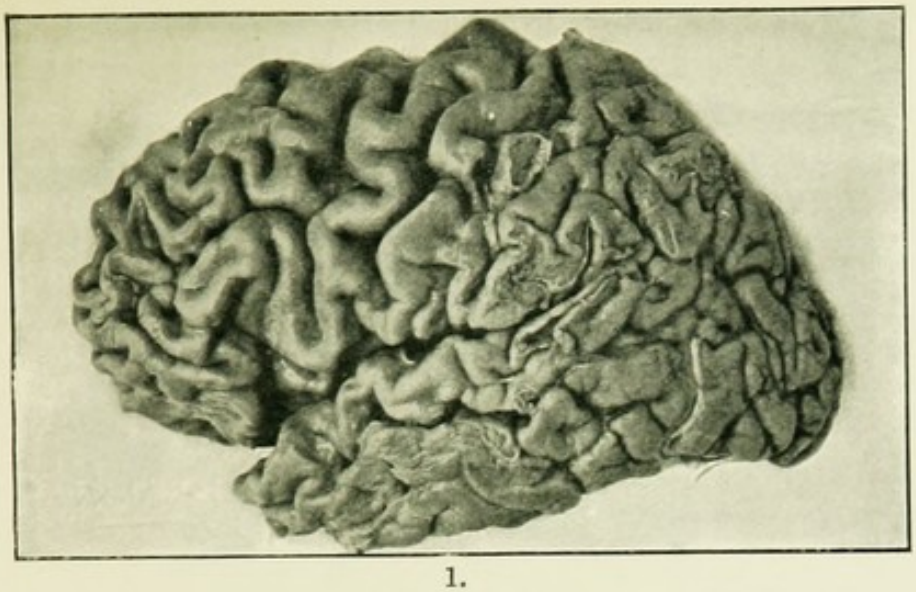
(reduced one half).

Reproduced from Dr. Mott's article on 'Juvenile General Paralysis,' *Archives of Neurology*, vol. i.

3.—Photomicrograph of a film preparation of the vessels stained by Nissl method from a case of general paralysis. It shows the proliferation of the nuclei of the capillaries, the absence of red corpuscles, and the obliteration of the lumen by the endothelial cell proliferation. Magnification 500 diameters.

Reproduced from Dr. Mott's article on 'Tabes in Asylum Practice,' *Archives of Neurology*, vol. ii.

PLATE IV.



1.



2.



3.

PLATE V.

TYPES OF CHANGE AFFECTING THE NERVE-CELLS.

All the drawings were made from cells of the cortex cerebri.

1.—Shows fairly advanced chronic degeneration.

2.—Swelling of the cell body and nucleus, with chromatolysis affecting especially the periphery of the cell.

3.—A more advanced stage of a similar change, chromatolysis with destruction of the cellular reticulum and displacement of the nucleus.

4, 5, and 6.—Stages of a similar change affecting smaller cells.

Drawn by A. M. Kelley.

(*Continued Plate VI.*)

PLATE V.



PLATE VII.

1.—Pyramidal cell of a dog after ligation of two carotids, one vertebral, and one subclavian. Great swelling of the nucleus, advanced chromatolysis most marked at the periphery of the cell. (Magnification 700 diameters.)

2.—Pyramidal cell of a dog after ligation of arteries, showing extreme chromatolysis with commencing extrusion of the nucleus. (Magnification 700 diameters.)

3.—Pyramidal cell, with diffuse staining, from a cat, after ligation of four cerebral arteries. (Magnification 500 diameters.)

4.—Pyramidal cell from a monkey five days after ligation of two carotids and one vertebral, showing swelling in the pyramidal cell with diffuse homogeneous staining owing to the stainable substance being scattered through the protoplasm of the cell as fine dust.

5.—Shows a cell with commencing chromolytic change.

6.—Shows a cell with advanced chromolytic change and eccentric nucleus. Both of these cells resemble the appearances presented by cells after section of a nerve, and the change may be due to the morbid process having caused destruction of the axis-cylinder process. They, however, are capable of regenerating the axis-cylinder process, the same as may occur after section of a nerve.

7 and 8.—Show morphological changes indicating death of the trophic and genetic centre. We see in 7 a concavity on one side indicating rupture of the nuclear membrane, and in 8 there is so much vacuolation of the protoplasm of the cell as to indicate its destruction.

(Reduction of drawings to two-thirds of present size will give correct magnification.)

Drawn by A. M. Kelley.

Reproduced from Dr. Mott's Croonian Lectures, 1900, on 'Degeneration of the Neuron.'

PLATE VII.

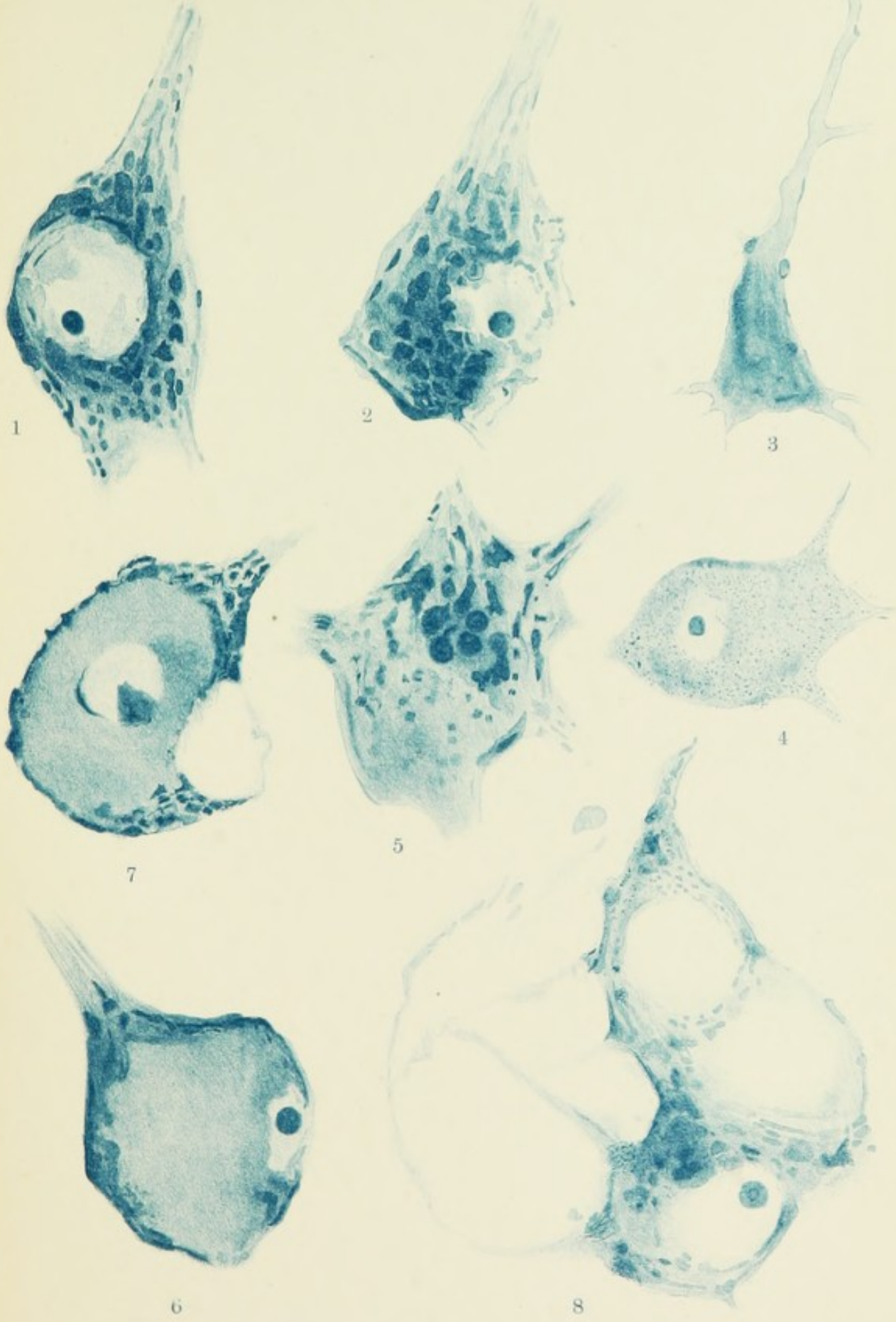


PLATE VIII.

THE BRAIN-CELLS IN STATUS EPILEPTICUS.

1.—Normal cell, for comparison.

2.—Cell from case of status epilepticus, showing an incrustation of fine blue particles upon the delicate fibrillæ of the achromatic network.

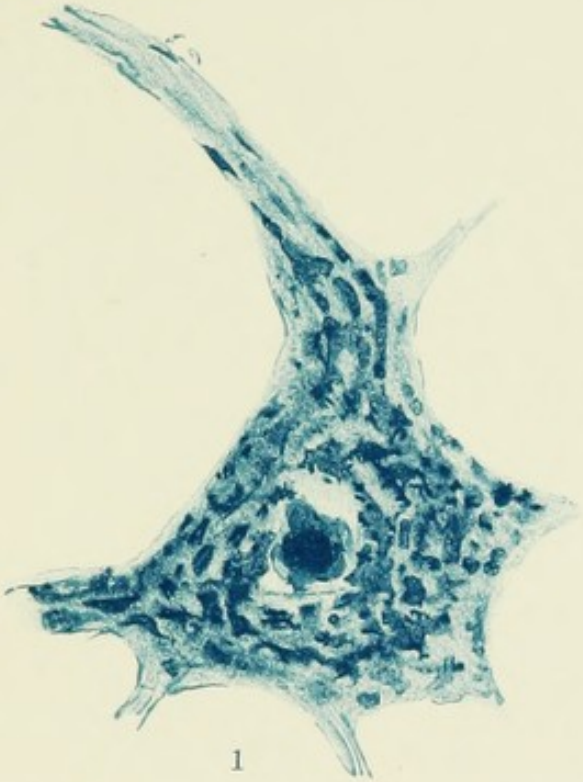
1 and 2 original magnification 750 diameters.

Drawn by A. M. Kelley.

Reduction to two-thirds of present size will give original magnification.

(*Continued Plates IX., X., and XI.*)

PLATE VIII



1



2

PLATE IX.

THE BRAIN-CELLS IN STATUS EPILEPTICUS.

(*Continued from Plate VIII.*)

Figure illustrates same points as 2, Plate VIII. Original magnification 750 diameters.

Drawn by A. M. Kelley.

Reduction to two-thirds of present size will give original magnification.

(*Continued Plates X. and XI.*)

PLATE IX.

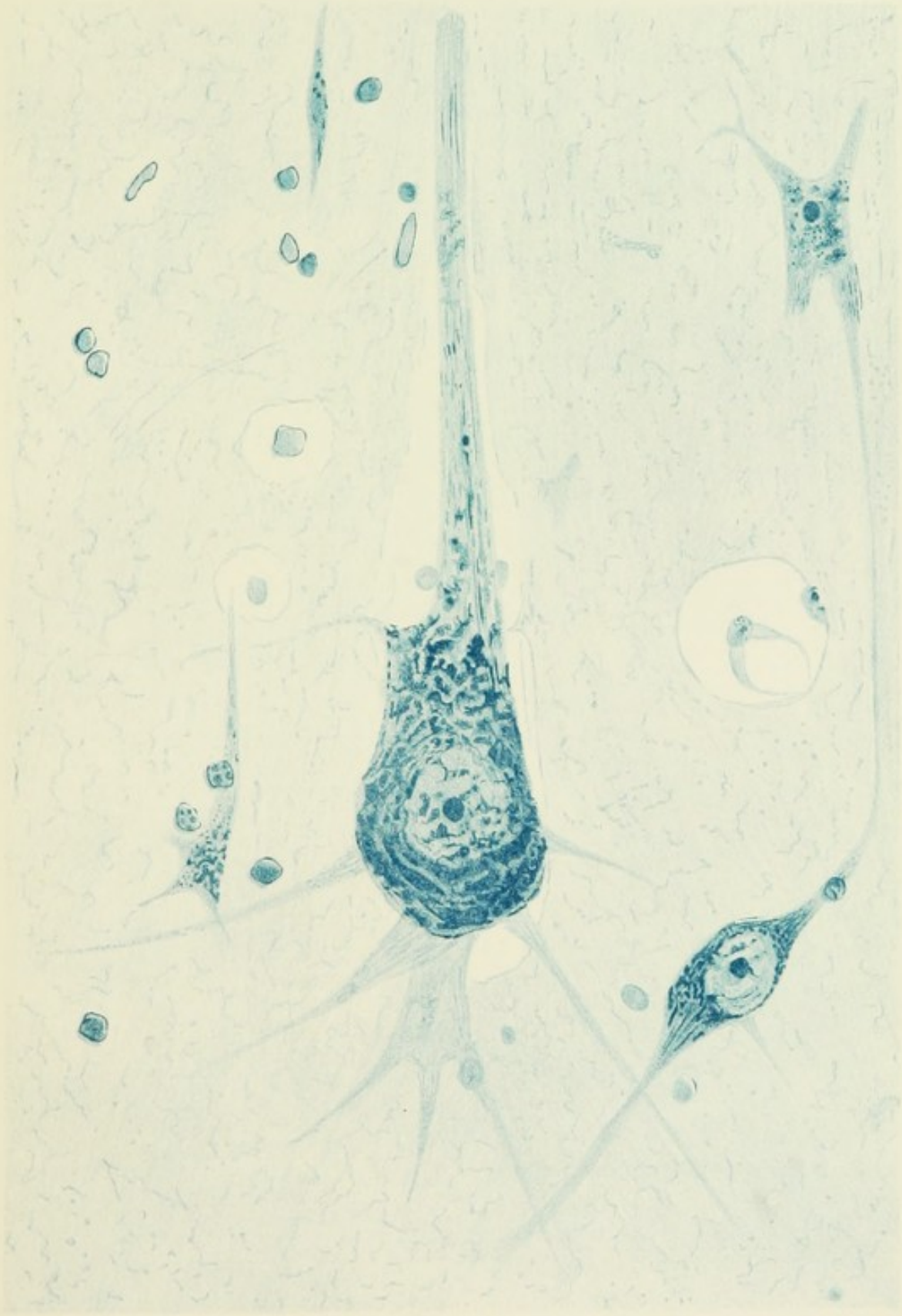


PLATE X.

THE BRAIN-CELLS IN STATUS EPILEPTICUS.

Continued from Plates VIII. and IX.)

1.—Cell from hypoglossal nucleus. There is commencing chromatolysis at the border of the cell, and the nucleus is larger and more distinct than normal; the chromatic spindles are still present in the processes, and the Nissl bodies are very evident in the substance of the cell.

2.—Illustrates the same points as 2, Plate VIII. and Plate IX., but the chromatolysis is more extensive.

Drawn by A. M. Kelley.

Original magnification 1,000 diameters.

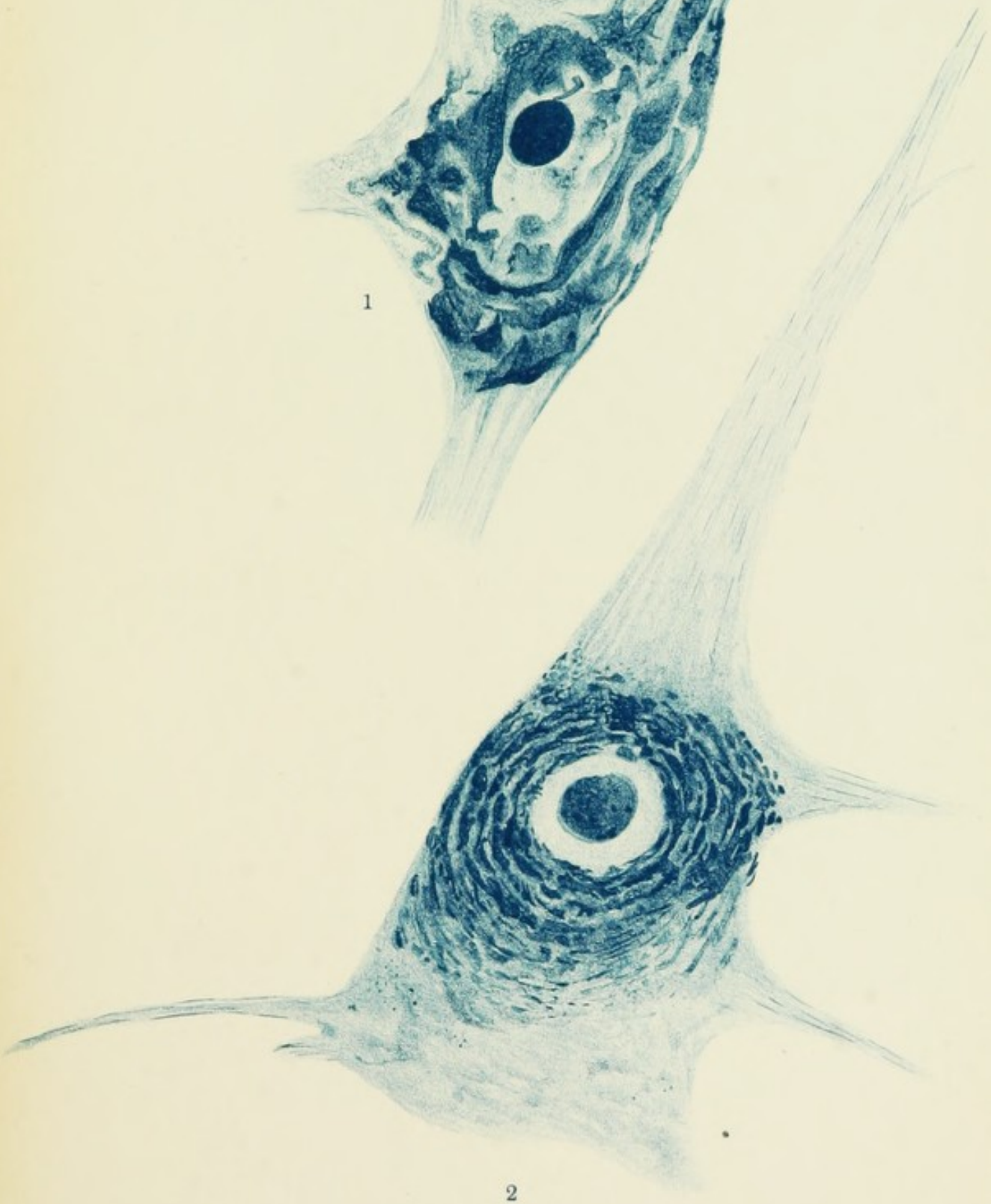
Reduction to two-thirds of present size will give original magnification.

(*Continued Plate XI.*)

PLATE X.



1



2

PLATE XI.

THE BRAIN-CELLS IN STATUS EPILEPTICUS.

(Continued from Plates VIII., IX. and X.)

The figure shows distension of the perivascular lymphatics; after experimental ligation of the carotids.

Original magnification 750 diameters.

Reduction to two-thirds of present size will give original magnification.

Drawn by A. M. Kelley.

Plates VIII., IX., X. and XI. are enlarged reproductions of drawings illustrating Dr. Mott's paper on 'Changes in the Brain &c. found in Persons dying after prolonged Epileptiform Convulsions,' *Archives of Neurology*, vol. i.

PLATE XI.

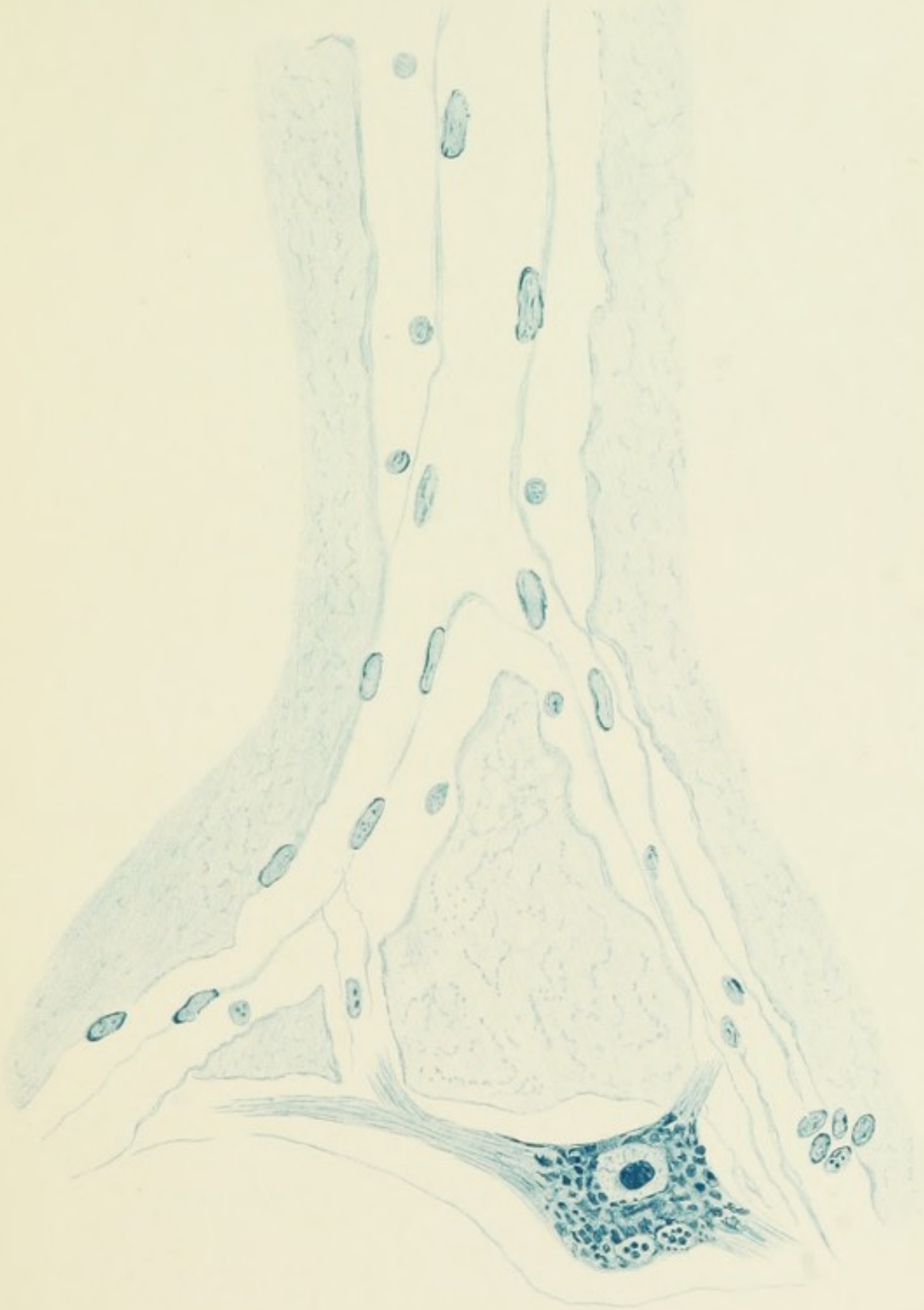


PLATE XII.

To Show Chromatolysis.

1.—Pyramidal cell of a dog after ligation of two carotids, one vertebral and one subclavian. Great swelling of the nucleus; advanced chromatolysis most marked at the periphery of the cell. Magnification 700.

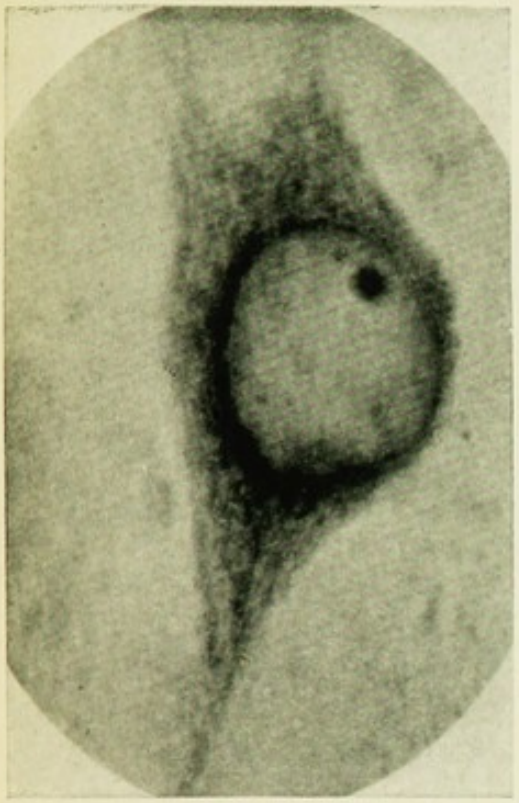
2.—Pyramidal cell with diffuse staining from a cat after ligation of four cerebral arteries. Magnification 500.

3.—Anterior horn cell of spinal cord from a guinea-pig which died forty-five hours after injection of 0·2 mg. of abrus-globin. All the cells showed this diffuse staining and absence of Nissl granules. Magnification 400.

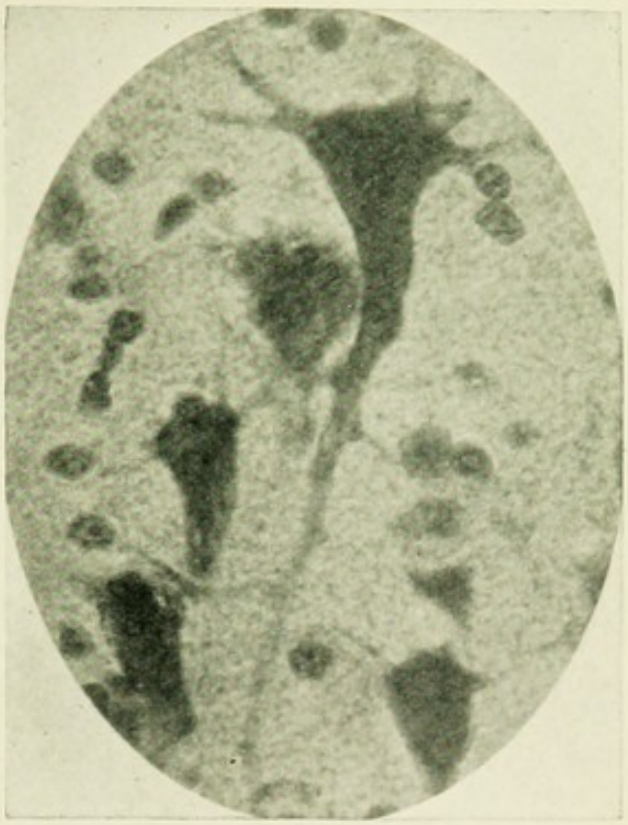
4.—Section of the spinal cord of a case of Congo sickness with hyperpyrexia, in which the temperature reached 109° F. prior to death. The whole of the cells throughout the central nervous system showed a diffuse homogeneous dull staining. The Nissl granules had entirely disappeared from the processes and the body of the cell, and the stainable substance had a fine dust-like appearance. The processes are unusually distinct, the nucleus is clear and swollen, faintly stained, and the nucleolus deeply stained. Magnification 400.

(*Continued Plate XIII.*)

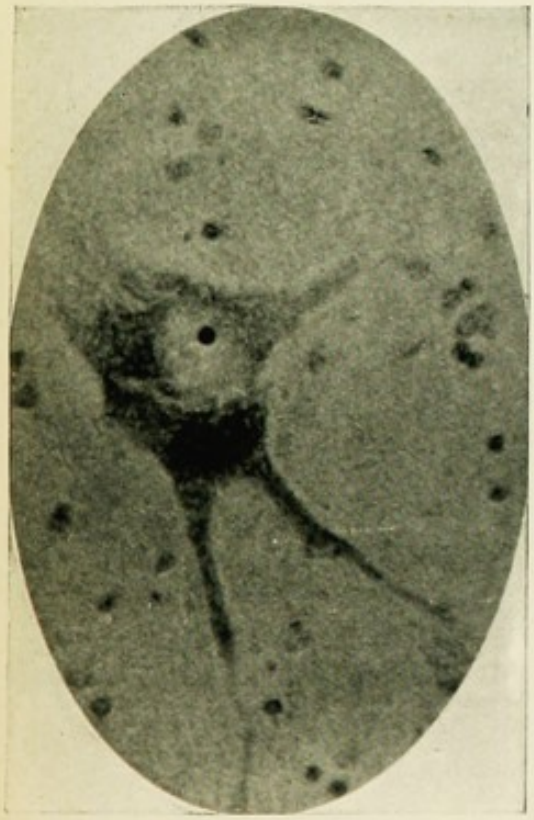
PLATE XII.



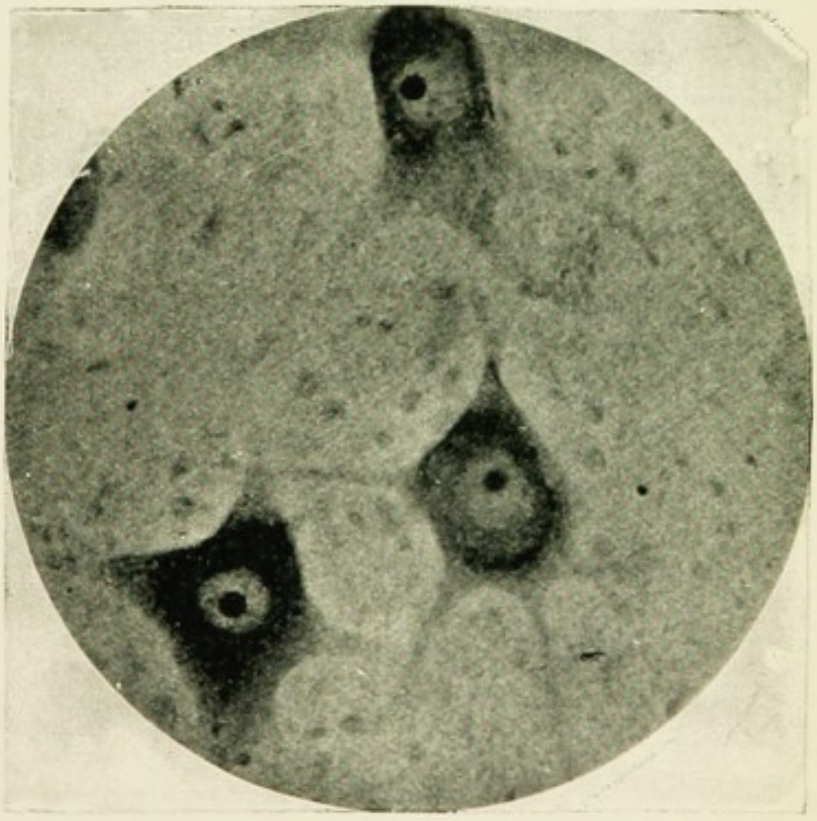
1.



2.



3.



4.

PLATE XIII.

(Continued from Plate XII.)

1.—Pyramidal cell from cortex of monkey, stained by rapid Golgi method, showing gemmules on the dendrons and all the external appearances of a normal cell. Magnification 150.

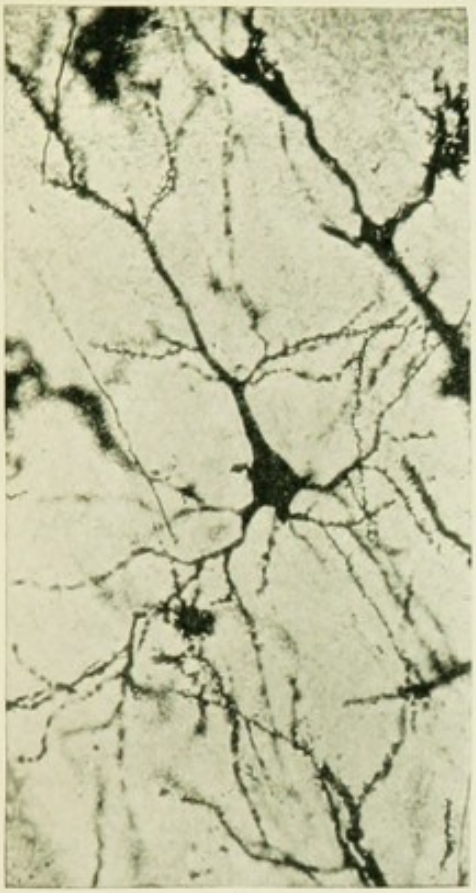
2.—Section of pyramidal tract of spinal cord of monkey ten days after ligation of two carotids and one vertebral. A few scattered degenerated fibres are revealed by the Marchi method. These were more numerous on the side opposite to the hemisphere on which the vertebral artery was ligatured, but altogether not more than sixty in number, so that only an inconsiderable number of the psycho-motor cells had perished as a result of the anæmia.

3.—Axis-cylinder process from a large pyramidal cell, the lymph space around which is distended, and showing the collateral side branches apparently forming a diffuse nerve network. Magnification 1,000.

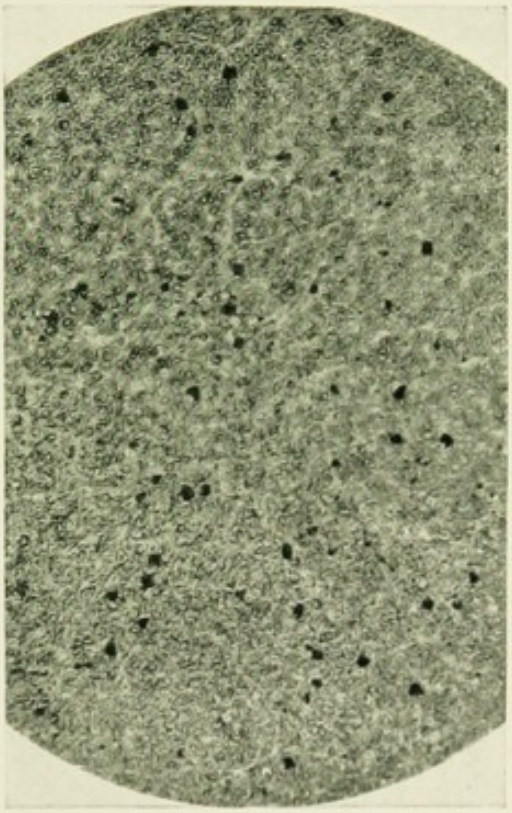
4.—Swollen œdematous cell from the top of the ascending frontal convolution, with diffuse staining and absence of Nissl granules, from a case of status epilepticus. Note the convex borders as compared with the concave and straight borders of the normal cell in 1, Plate VIII. Magnification 700.

Plates XII. and XIII., reproduced from Dr. Mott's Croonian Lectures, 1900, 'Degeneration of the Neuron,' as published in the *British Medical Journal*.

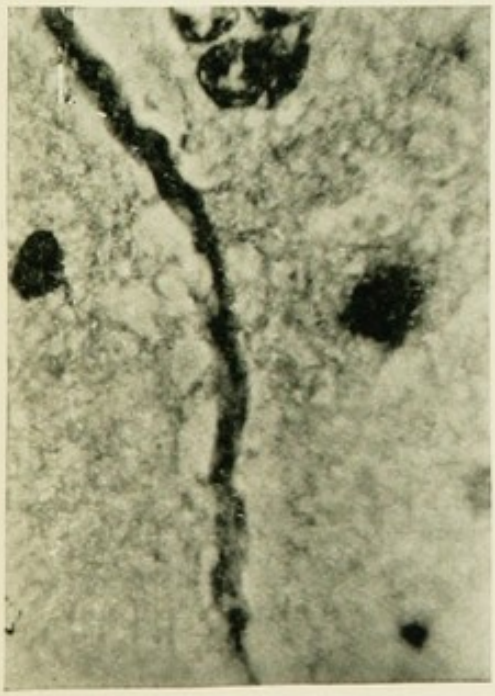
PLATE XIII.



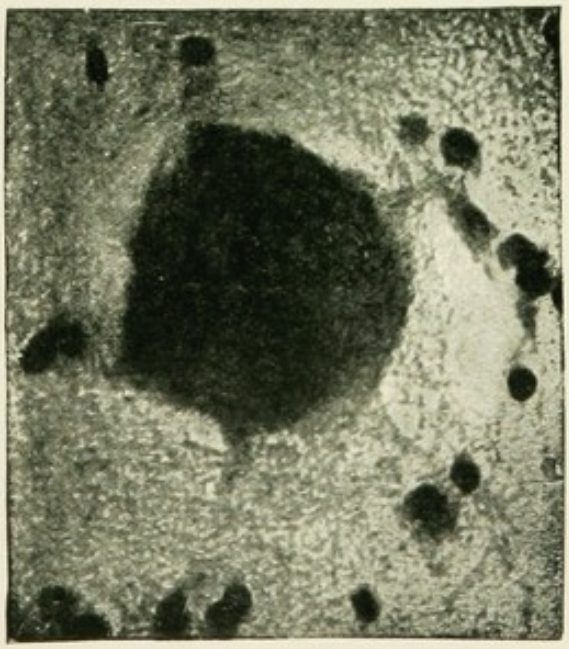
1.



2.



3.



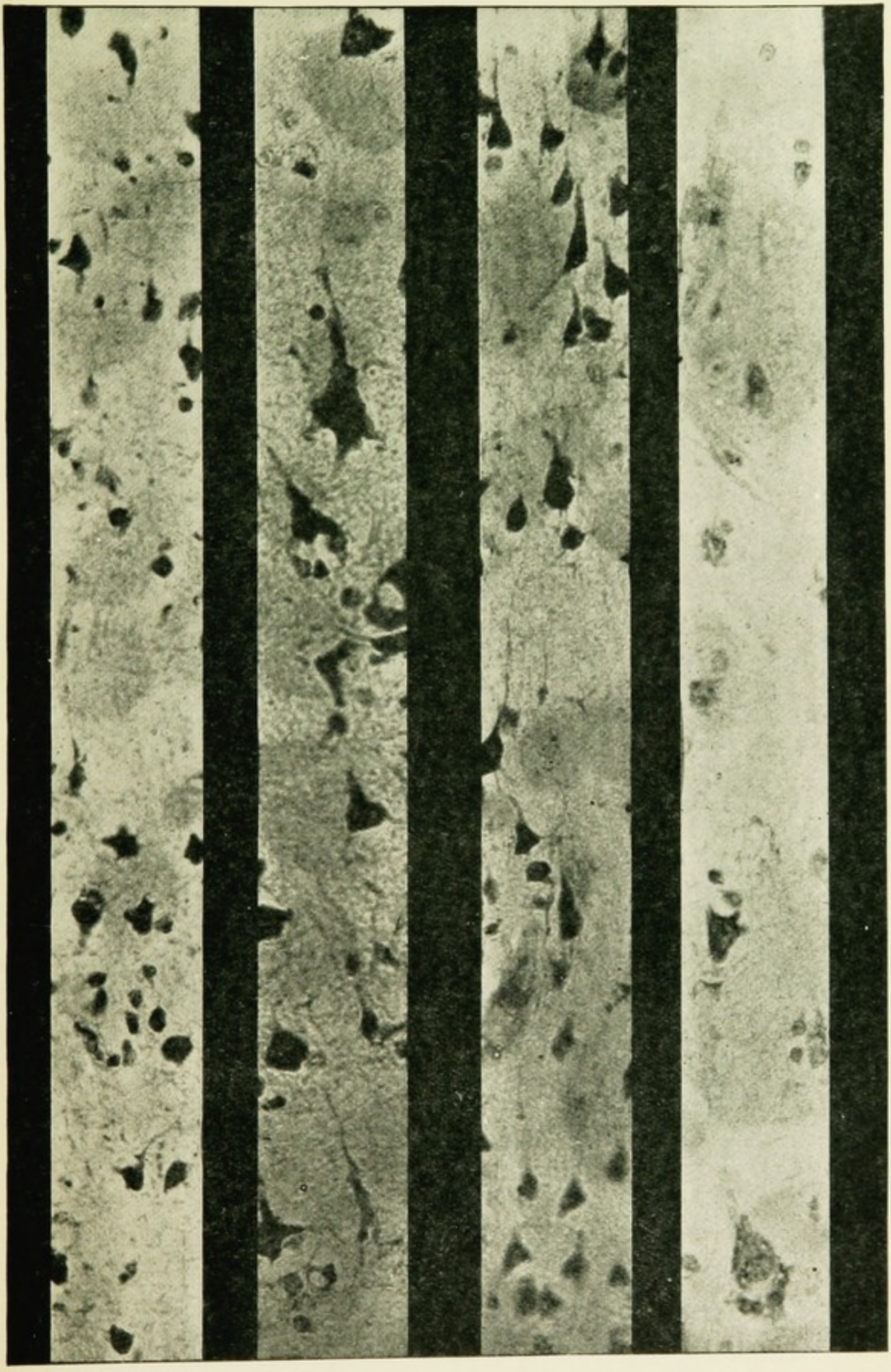
4.

PLATE XIV.

Photomicrograph of strips of the brain, which are from left to right. 1. Small and medium-sized pyramidal layer, top of ascending frontal, showing abolition of Meynert's columns produced by destruction and distortion of the pyramids. Not a healthy cell is seen. There is marked proliferation of glia cells. 2. The same section of the cortex in the deeper layer of large pyramids. Two Betz cells are seen together; one is obviously destroyed, and has been partially devoured by phagocytes. Most of the cells are abnormal. 3. Pyramidal layers of occipital cortex. Both as to numbers and conformation they present a comparatively normal appearance. 4. Broca's convolution, very marked destruction of medium-sized pyramids shown.

Reproduced from Dr. F. Mott's paper on 'Tabes in Asylum Practice,' *Archives of Neurology*, vol. ii.

PLATE XIV.



1. 2. 3. 4.

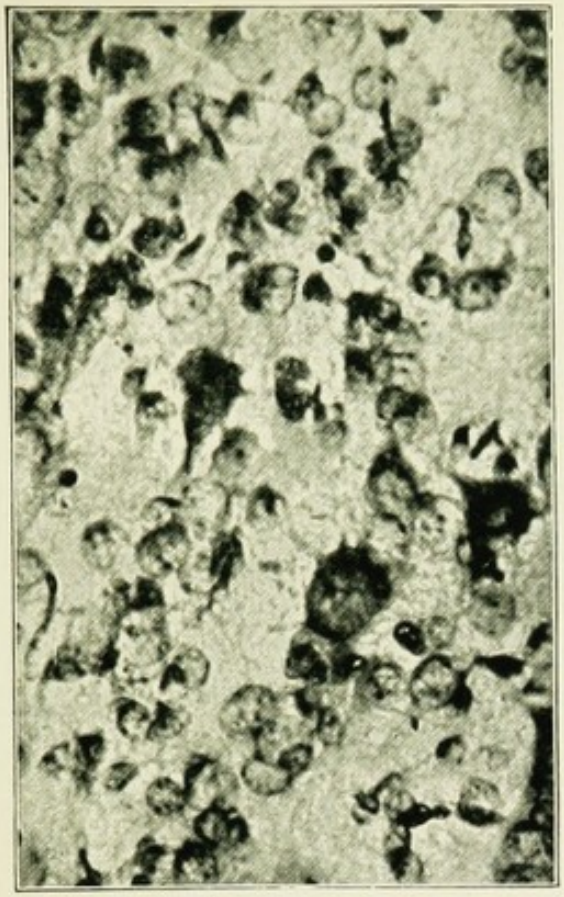
PLATE XV.

1.—Photomicrograph. Section of central convolution stained by Nissl method, to show acute degenerative changes in the pyramidal cells. Magnification 250 diameters.

2 and 3.—Photomicrographs. Section of top of ascending frontal, left hemisphere stained by Nissl method, showing atrophy of superficial layers of cells especially, without glia proliferation. Compare with other figure from normal brain. Magnification 200 diameters.

Reproduced from Dr. F. Mott's paper on 'Juvenile General Paralysis,' *Archives of Neurology*, vol. i.

PLATE XV.



1.



2.



3.

PLATE XVI.

Phases in the development of neuroglia cells and fibrils.

The drawings are all from cells of the cortex cerebri stained by Heidenhain-Erythrosin method. They appear somewhat diagrammatic, partly from being drawn in one plane, and partly owing to the process of reproduction, but are really little more so than the preparations show. The parts shaded grey are stained pink in the specimens.

1, *a* and *b*.—Dividing neuroglia nuclei surrounded by an indefinite amount of protoplasm.

2, *a* and *b*.—Protoplasmic processes more definitely formed.

3, *a* and *b*.—Commencing condensation of protoplasmic processes producing darkly staining fibrils.

4, *a*, *b*, and *c*.—Show mode of attachment of the processes to a vessel-wall. In *a* and *b* there is apparent partial differentiation of the protoplasm of the 'foot' into fibrils.

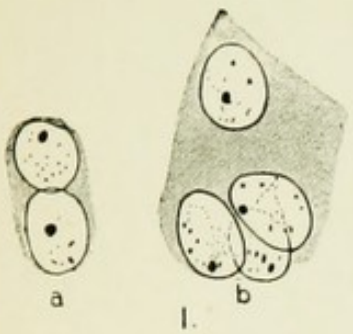
5, *a* and *b*.—Further development of fibrils. The nucleus is more darkly stained, and in *b* the pink-stained protoplasm somewhat less in amount; *a* shows a 'recurved,' and *b* 'bifurcated' fibrils.

6.—The protoplasm is almost entirely differentiated into fibrils, and the nucleus is shrunken and stains darkly.

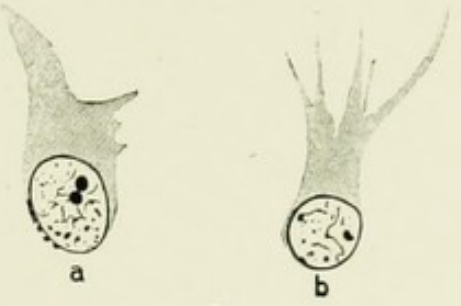
One-twelfth oil immersion lens and Nr. 4 ocular.

Reproduced from Dr. G. Watson's paper on 'Histology of General Paralysis,' *Archives of Neurology*, vol. ii.

PLATE XVI.



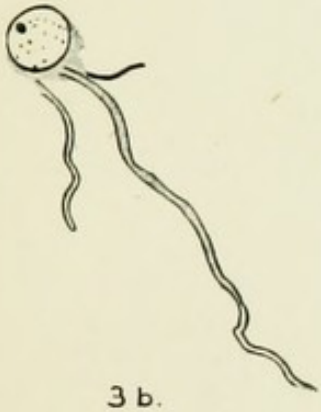
1.



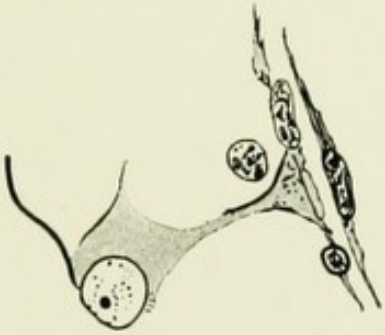
2.



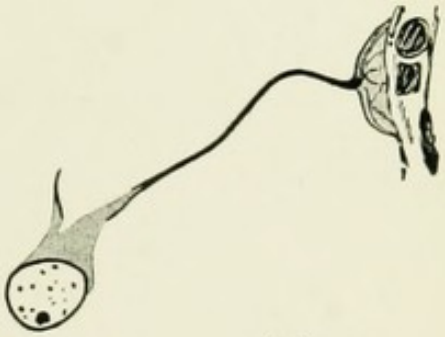
3 a.



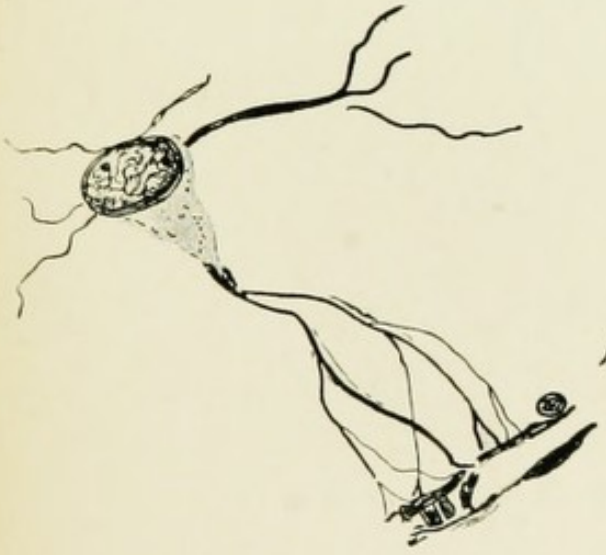
3 b.



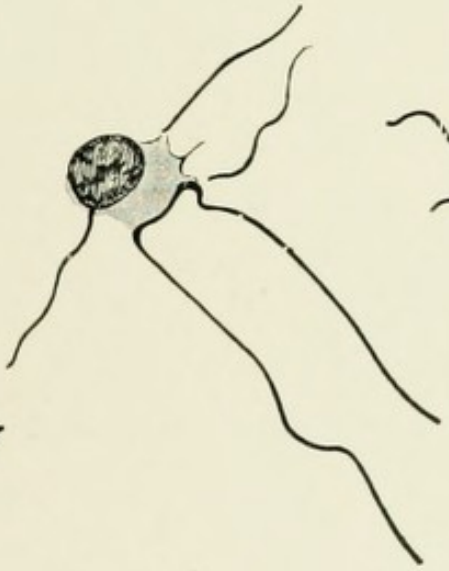
4 a.



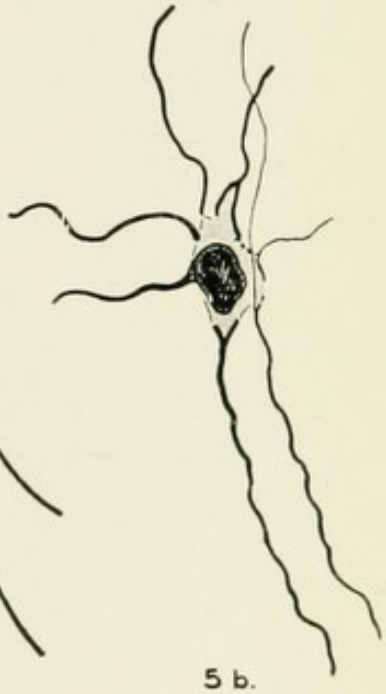
4 b.



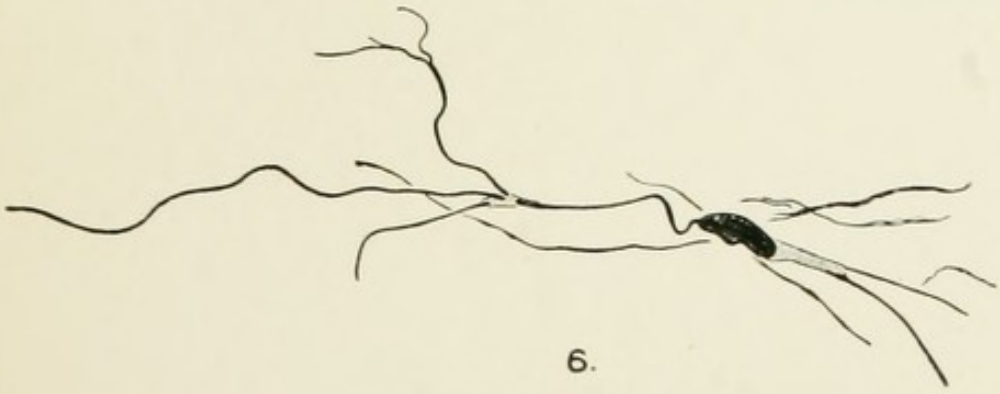
4 c.



5 a.



5 b.



6.

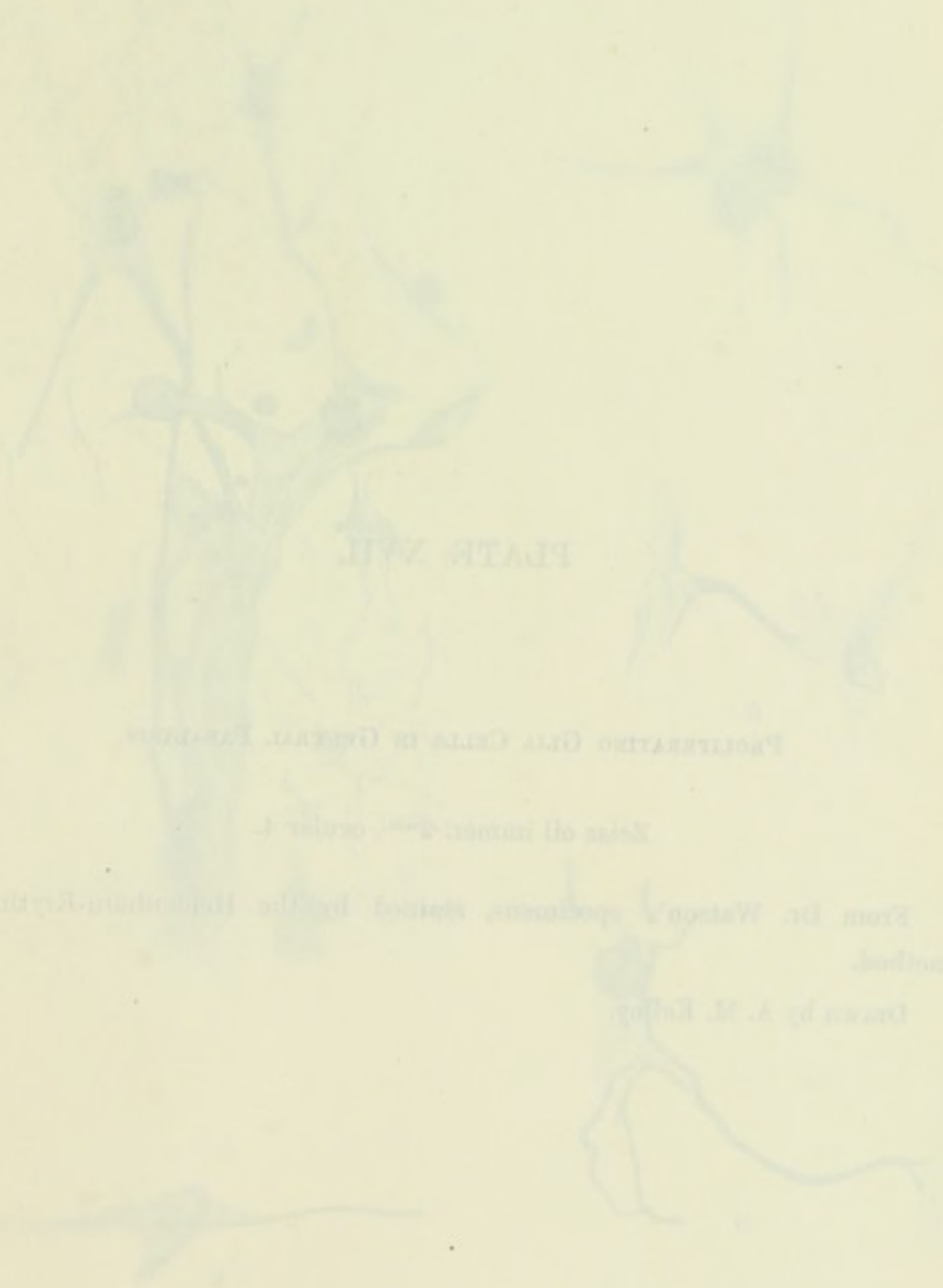


PLATE XVII.

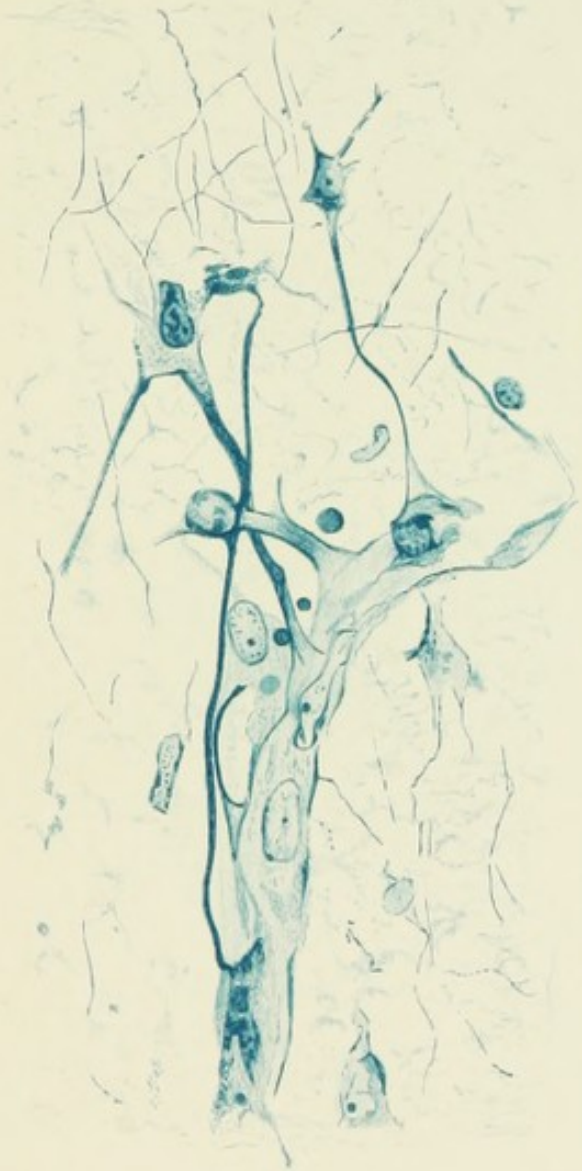
PROLIFERATING GLIA CELLS IN GENERAL PARALYSIS.

Zeiss oil immer. $2^{mm.}$, ocular 4.

From Dr. Watson's specimens, stained by the Heidenhain-Erythrosin method.

Drawn by A. M. Kelley.

PLATE XVII.



1



2



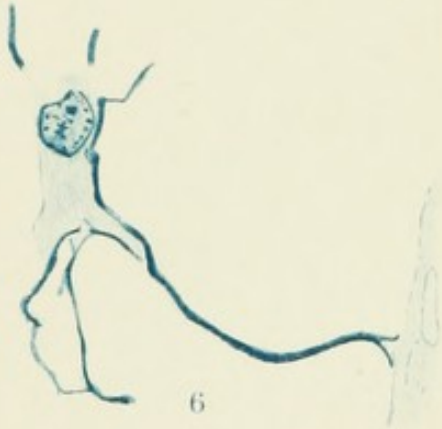
3



4



5



6



7

PLATE XVIII

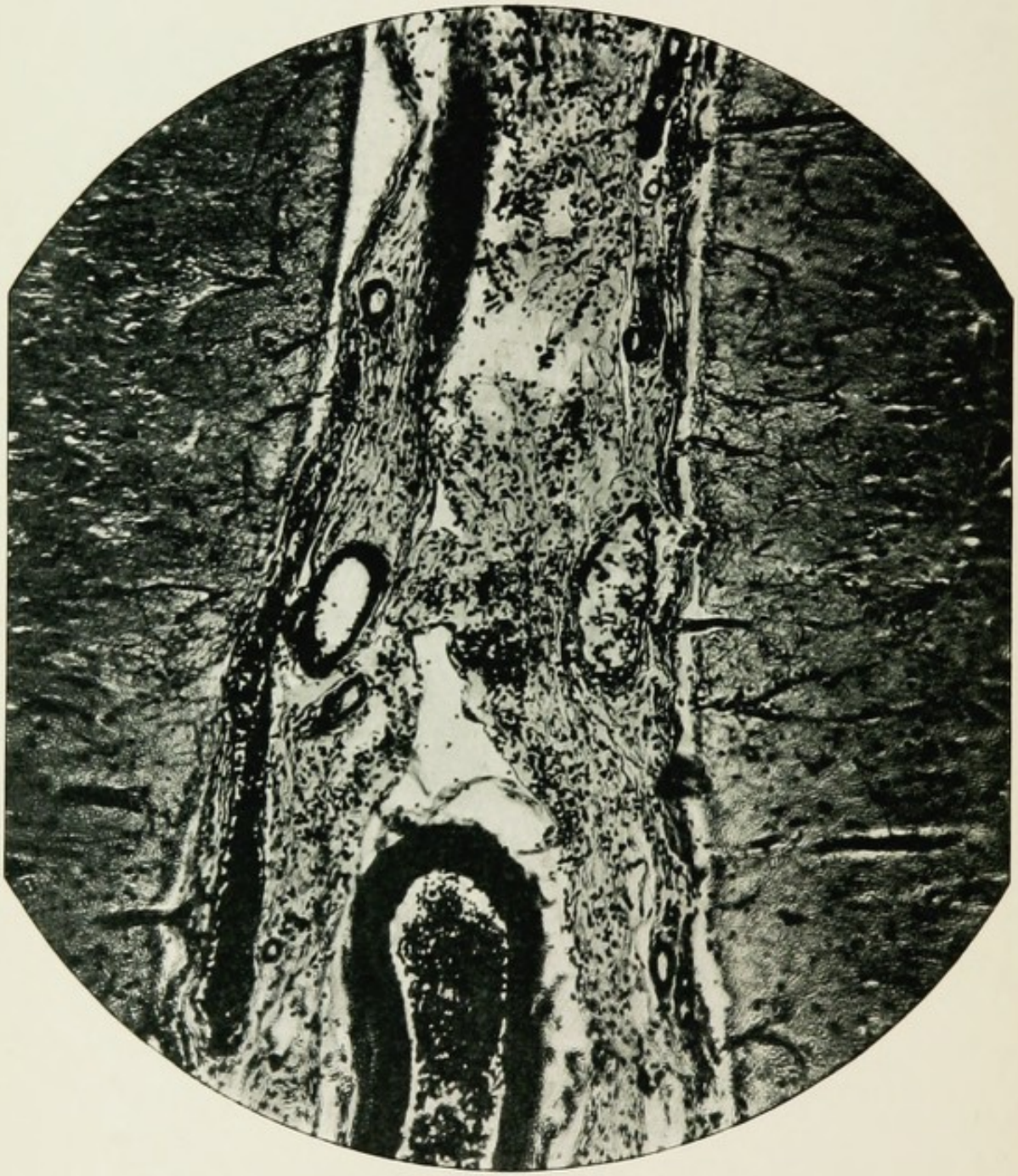
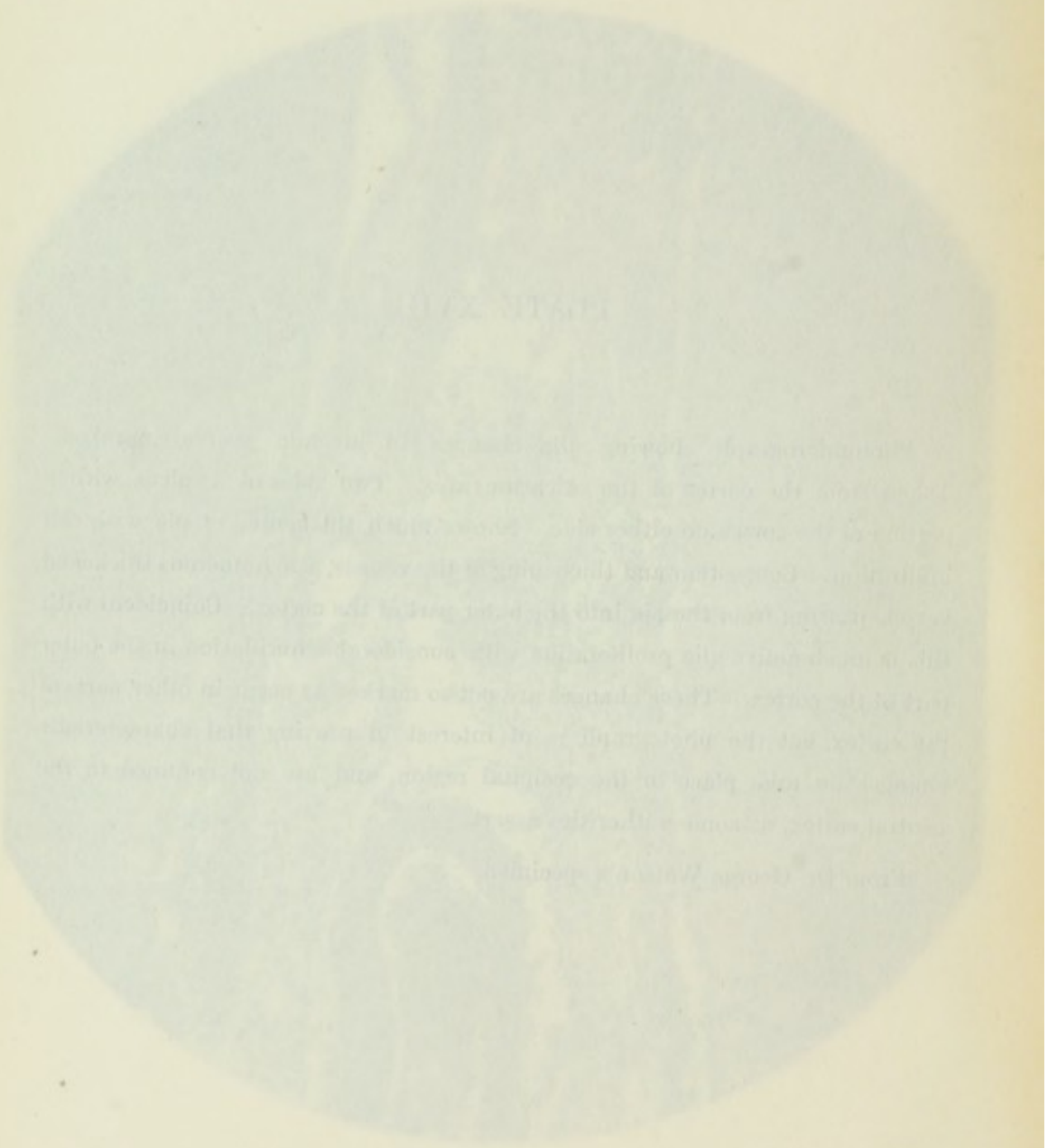


PLATE XVIII.

Photomicrograph showing glia changes in juvenile general paralysis. Taken from the cortex of the calcarine area. Two sides of a sulcus with a portion of the cortex on either side. Shows much thickening of pia with cell infiltration. Congestion and thickening of the vessels, also numerous thickened vessels passing from the pia into the outer part of the cortex. Coincident with this is much active glia proliferation with considerable fibrillation in the outer part of the cortex. These changes are not so marked as occur in other parts of the cortex, but the photograph is of interest in proving that characteristic changes do take place in the occipital region, and are not confined to the central cortex, as some authorities assert.

From Dr. George Watson's specimen.



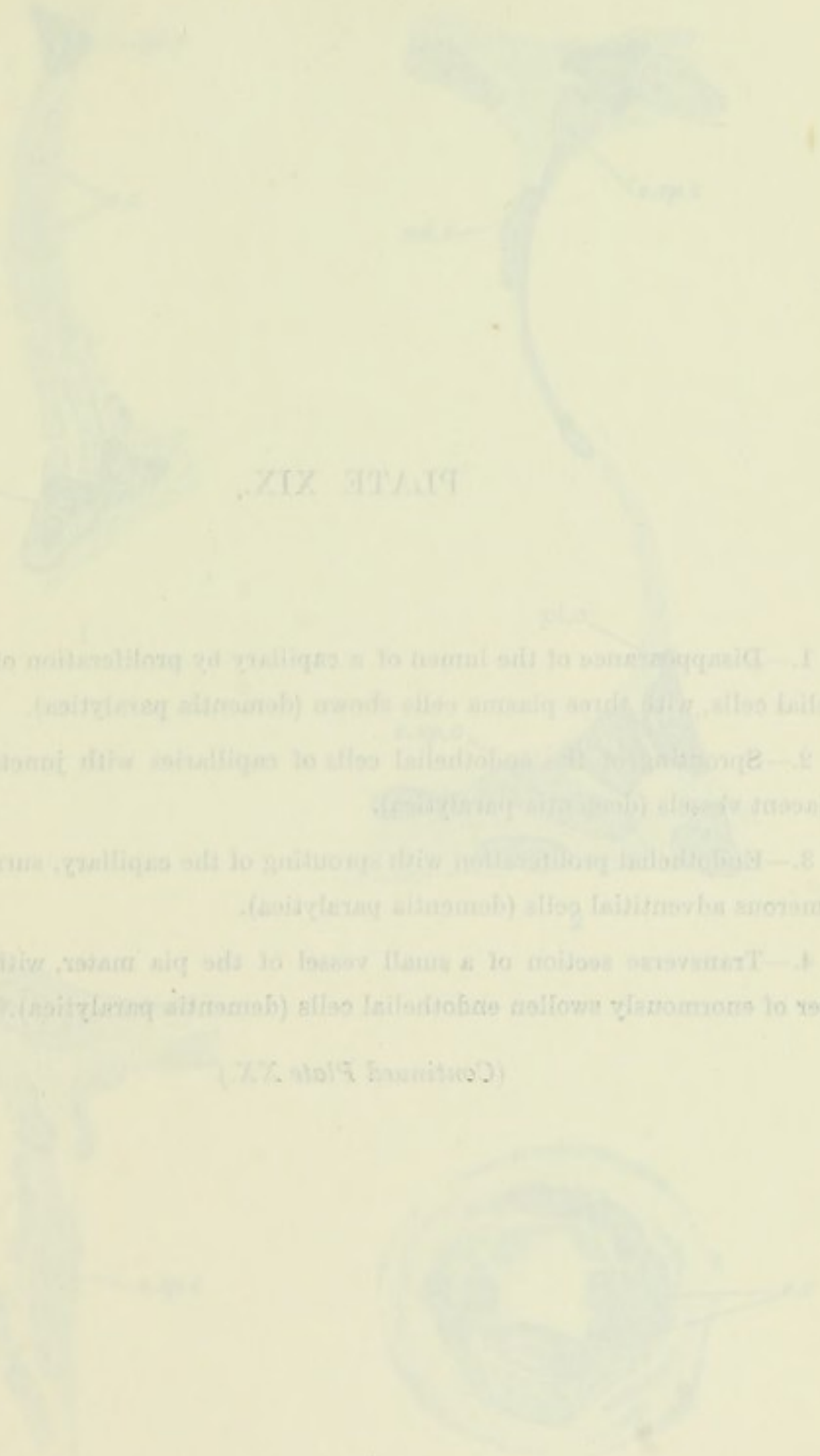


PLATE XIX.

1.—Disappearance of the lumen of a capillary by proliferation of the endothelial cells, with three plasma cells shown (dementia paralytica).

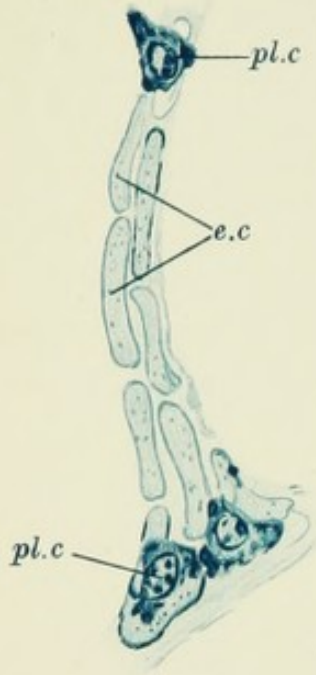
2.—Sprouting of the endothelial cells of capillaries with junction of two adjacent vessels (dementia paralytica).

3.—Endothelial proliferation with sprouting of the capillary, surrounded by numerous adventitial cells (dementia paralytica).

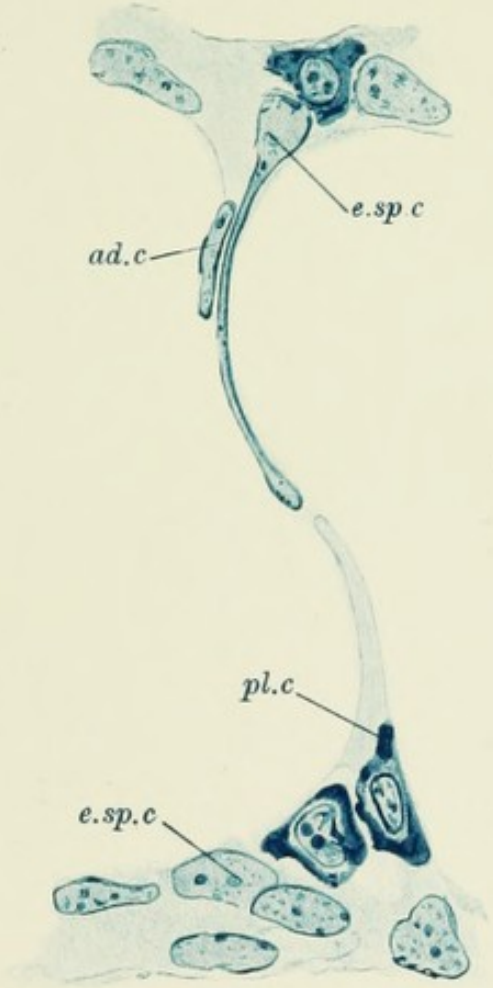
4.—Transverse section of a small vessel of the pia mater, with a double layer of enormously swollen endothelial cells (dementia paralytica).

(Continued Plate XX.)

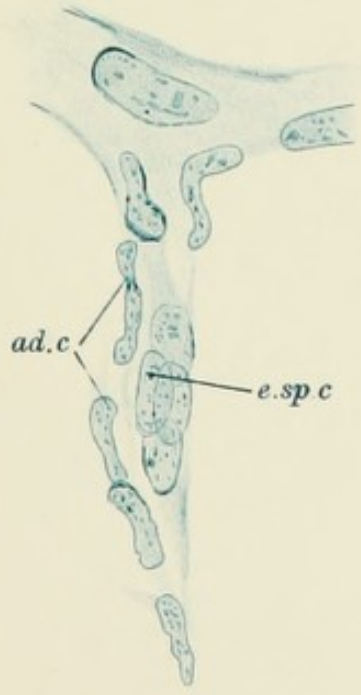
PLATE XIX.



1



2



3



4

pl.c—plasma cell *e.c*—endothelial cell *ad.c*—adventitial cell

e.sp.c—endothelial sprouting cell

l—lumen *m.c*—mast cell *lc*—lymphocyte

PLATE XX.

(*Continued from Plate XIX.*)

1.—Capillary from the deep layer of the cortex. Marked overgrowth of the endothelial cells (dementia paralytica).

2.—Longitudinal section of a vessel from the deep layer of the cortex. Infiltration of the adventitial sheath with large plasma cells and mast cells (dementia paralytica).

3.—Longitudinal section of a vessel from the spinal cord, showing marked proliferation of the endothelial cells within the lymphatic sheath. Very numerous lymphocytes and plasma cells; from case of syphilitic meningomyelitis.

PLATES XIX. and XX.—After A. Alzheimer, from *Histologische Studien zur Differenzialdiagnose der progressiven Paralyse.*

Drawings by A. M. Kelley.

PLATE XX.



pl.c—plasma cell *e.c*—endothelial cell *ad.c*—adventitial cell

e.sp.c—endothelial sprouting cell

l—lumen *m.c*—mast cell *lc*—lymphocyte

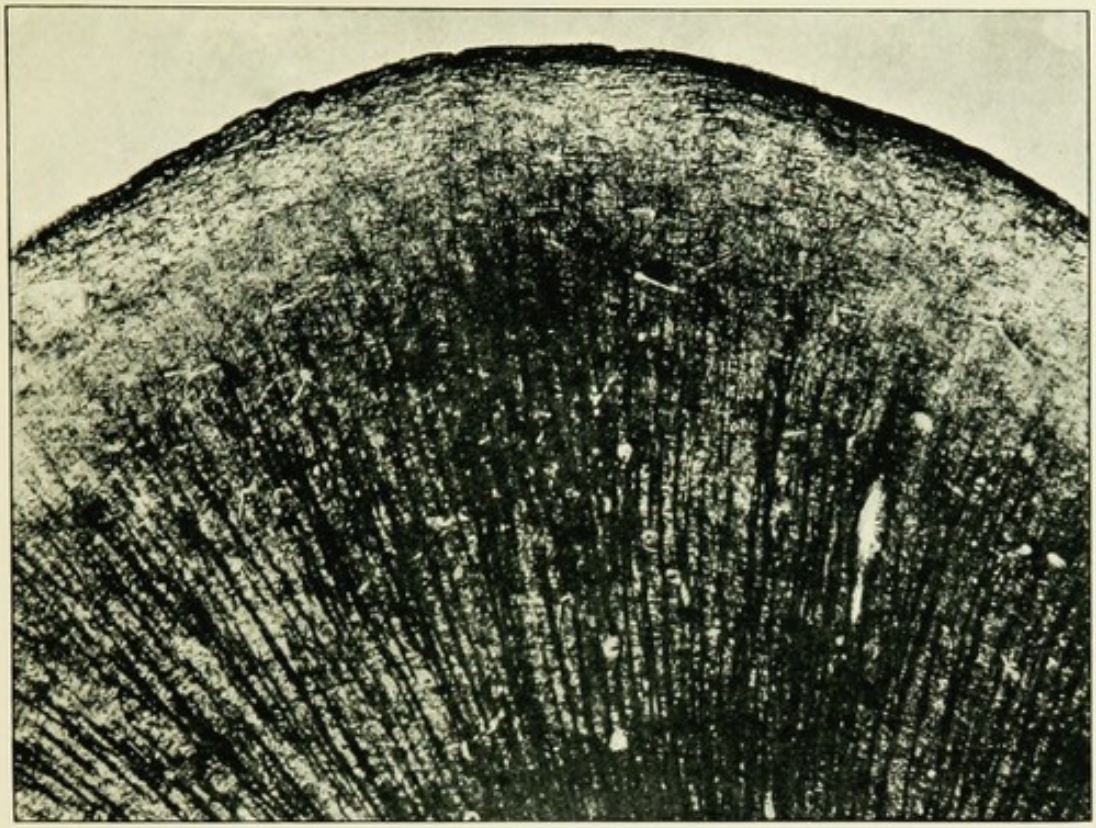
PLATE XXI.

1.—Section of cerebral cortex, stained by Kultschitzky-Wolters method, showing normal medullated fibres, × 25.

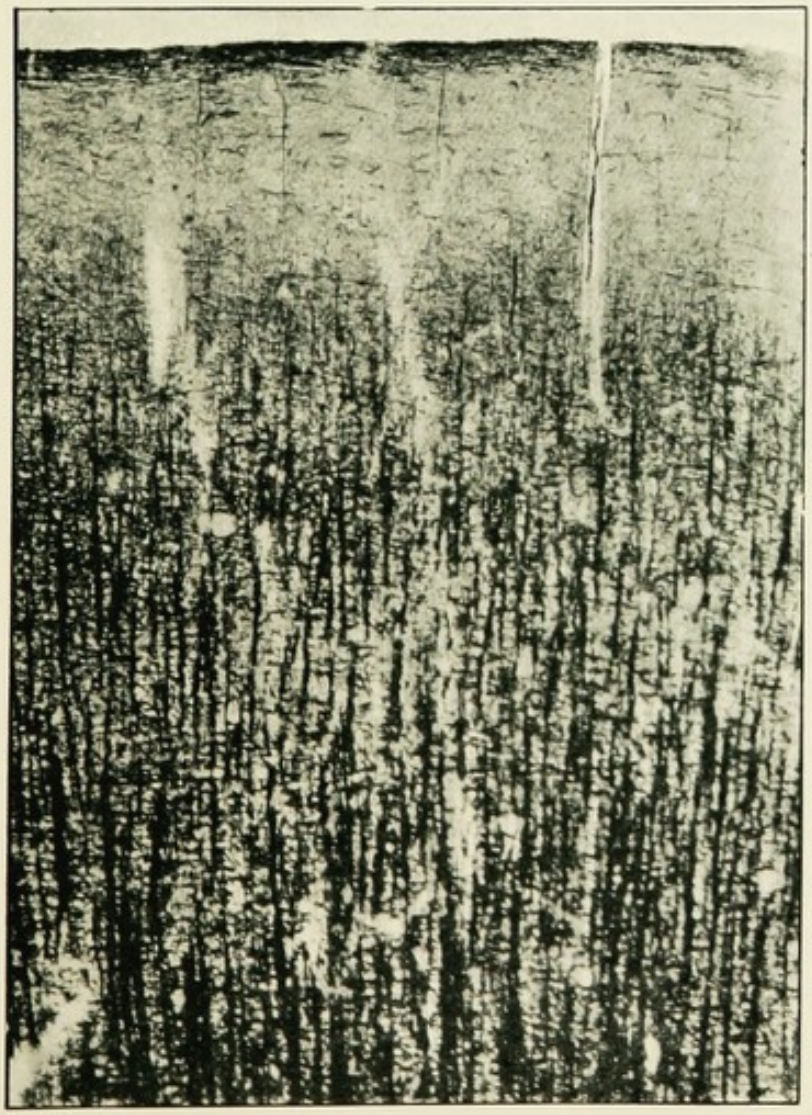
2.—Stained as above; from case of acute excitement; section shows no abnormal change.

(*Continued Plate XXII.*)

PLATE XXI



1.

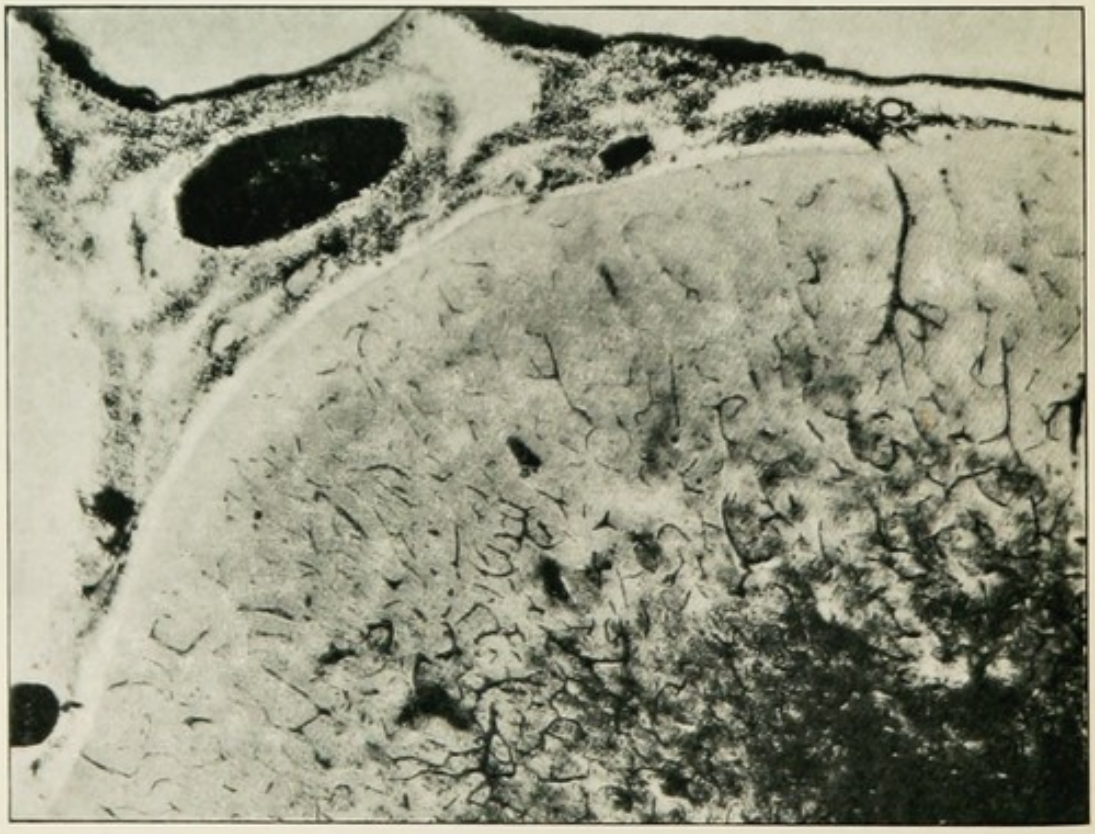


2.

PLATE XXII.



1.



2.

PLATE XXII.

(*Continued from Plate XXI.*)

1.—Section of cerebral cortex stained by Kultschitzky-Wolters method, wing tortuosity of the radiations from a case of dementia paralytica, × 300.

2.—Section of cerebral cortex stained as above, showing extreme destruction of fibres, including radiations, fibres almost entirely absent. Greatly increased vascularity and chrome-infiltration, from case of dementia paralytica, × 35.

Photomicrographs on Plates XXI. and XXII., originally published by Dr. Goodall in *Brain*, vol. xxiii., to illustrate paper on 'Condition of Medullated Fibres in Insanity.'

difficulties; in the first place the relatives rarely believe that the diagnosis is true, and in the second place the patient refuses advice, as he does not believe himself to be ill. A careful watch must be kept over all monetary matters, and the friends and business colleagues of the patient should be warned that he may suddenly show a tendency to reckless extravagance, and within a short time prejudice his own and their credit. If a patient is known to have embarked on some wild scheme, or to be negotiating about the purchase of some property which he neither requires nor can pay for, immediate steps should be taken to warn the other party of the mental state of the patient, and to tell him that if he continues to negotiate he does it at his own risk. The usual difficulty is that the patient is deeply involved in some business before the transaction is known to his friends. If possible get him away into some quiet country place, but take the precaution, wherever he is, to have plenty of assistance within reach, as patients with this disease frequently become suddenly unmanageable.

If the patient is certifiable, it is better for him to be placed at once under care. If the case has to be treated at home or in a private house, rules should be drawn up both as to the diet and general management. Moderate exercise should be ordered, and this is by no means easy to carry out, as the patient is usually restless and full of energy, and will not be satisfied with less than twenty miles a day, or many hours of golf or other games. There is nothing that calls for greater tact than having to regulate the exuberant spirits of the general paralytic in the early stages. With physical fatigue, every symptom from which he suffers will become exaggerated. The diet should be light and nutritious. Milk should be given in fairly large quantities. Meat should be restricted, and all alcohol forbidden. Sexual intercourse should not be permitted. Drugs are of little value in the early treatment of general paralysis. When there is insomnia hypnotics should be given, if food and regular living have failed to produce sleep. Antisyphilitic treatment is of no value, and is not recommended. The bowels require careful attention. Retention of urine is a symptom which may give trouble, and it is necessary for the attendant to see that the urine is passed in sufficient

quantities. 'Seizures' may occur at any time, and the valet should be warned not to allow the patient to walk or stand in dangerous places. For the same reason he should not be left alone at night. Trephining of the skull and drainage of the sub-arachnoid fluid has been tried, on the theory held by some authorities that the symptoms are largely due to pressure. But this mode of treatment has not proved of much benefit; remissions have occurred in patients so treated, but not in greater proportion than in the untrephined cases.

In the later stages of the disease careful nursing is very requisite. The food should be minced, and the patient prevented from trying to eat too quickly, otherwise he may choke himself. Great care should be exercised in handling a general paralytic, as he not only bruises readily, but his bones are very brittle. If the patient is unconscious for any length of time owing to a series of convulsions, he must constantly be turned from side to side, otherwise bed-sores will form. The bowels also require continual care. The temperature should be taken morning and evening, as fever may be the first warning of some intercurrent complication or of the accession of a seizure. When the patient becomes bedridden it is very advisable to have him, when possible, placed on a water bed, as bed-sores are apt to form very rapidly.

CHAPTER XV

EXHAUSTION PSYCHOSES: NEURASTHENIA; ACUTE HALLUCINATORY INSANITY

Neurasthenia

Neurasthenia is a disorder which is considered by many observers to be the product of civilisation. Others hold that it is a disorder which has always been with us, but is more accurately diagnosed to-day than in former times. It is a 'fatigue' condition, and, as the whole nervous system fatigues equally, the disorder will be found to include mental, motor, and sensory disturbances.

Ætiology.—Neurasthenia most commonly appears during the prime of life. The condition is met with in both sexes, but the stresses which produce it in the female somewhat differ from those which occasion it in the male. Domestic strains of every kind weigh heavily on the former, while the latter are more affected by business and financial worries. The 'nervous exhaustion' may be traceable to some definite exciting cause. Too close application to study may act as the exciting cause; most frequently is this the case in youths and young women working for examinations. Many an individual ruins health and future usefulness by trying to win a scholarship, or to take a high place in some competitive or class examination. Excesses of all kinds, such as alcoholism or venery, may undermine the nervous energy, and ultimately produce a neurasthenic condition. Irregularity in meals and neglect to take proper hours of rest are fertile causes in the production of neurasthenia. Many men, having spent their days in close offices, will sit up night after night in vitiated atmospheres until the early hours of the morning; or will carry on their business with such feverish energy that they forget or neglect the midday meal. Sooner or later nervous

exhaustion overtakes them. Injuries or shocks may produce the condition. Exhausting illness may be followed by a long period of neurasthenia. Too violent athletic exercises may produce this disorder in either sex. A neurotic inheritance is by no means a constant factor in the history of these cases. No race seems to be exempt from the disorder, though the causes probably vary in different countries.

Mental Symptoms.—The mental symptoms are almost identical with those that are found in ordinary fatigue, but as neurasthenia is a more chronic condition the symptoms will be found to be more fully developed. Every mental attribute is affected, but the latest acquired and least organised suffer most. Irritability and loss of control are prominent symptoms. The presence of chattering children in a room quickly fatigues persons in this condition, and in course of time becomes unendurable. Clocks and other monotonous sounds have to be stopped, as they cause severe mental pain. Mental concentration becomes difficult or impossible. Attention rapidly fails, and its failure is soon reflected on the memory. Names and details cannot be remembered, and business capacity decreases. Obsessions and vague fears arise; so simple a task as the crossing of a street may cause suffering. The neurasthenic usually recognises the folly of his fears, but cannot dispel them. A sense of giddiness is not uncommon; it is not a true vertigo, but rather a feeling of lightness or 'swimming in the head.' The legs feel as if they were not under proper control, and jerky movements may also be observed.

The neurasthenic complains that he cannot think, that his mind seems a blank, and that he feels nervous when spoken to. His speech often becomes hesitating, and he may stumble in pronouncing words. Sooner or later he becomes anxious about himself, and may fear that he is losing his reason. Hypochondriacal feelings slowly develop, and the patient begins to explain his various symptoms. In some cases he will refer everything to his head, and may even develop delusions. Headache and other disordered cerebral feelings are common. Other patients complain of spinal weakness. This symptom is not uncommon in persons who have been in a railway accident; in such a case the sense of weakness may have arisen from some slight spinal concussion. Women chiefly

complain of continual pain in the lower part of the back or in the coccyx.

Another class of patients refer their condition to gastro-intestinal weakness or disturbance, and sufferers of this type may starve themselves under the belief that they are unable to digest any food. They will gradually eliminate various classes of food from their dietary, until at length there is nothing that they can take. In such cases constipation is a common and troublesome symptom. The sexual variety of neurasthenia is perhaps one of the most frequent types. The patient believes himself to be impotent, and not infrequently adds to his mental distress by reading quack literature on the subject. Spermatorrhœa may be a prominent symptom, and the frequency of the emissions may further tend to weaken the patient. Lack of confidence interferes with the due discharge of daily work; the patient becomes introspective, and may, if untreated, develop acute depression with suicidal tendencies.

Physical Symptoms.—Insomnia is an early and trying symptom in neurasthenia. Some patients fail to get off to sleep, others wake within a hour or two of retiring to rest. Even the sleep that is obtained is not refreshing. However tired and sleepy a patient feels before going to rest, immediately he gets to bed his brain becomes active. He begins to dread the nights, and frequently sits up reading or spends many hours walking about the bedroom. Hearing seems to be accentuated: every little noise worries the invalid. Indigestion is a common symptom, and is usually accompanied by constipation. The neurasthenic complains of 'flutterings' and palpitation about the heart. Sweating and blushing occur readily. The pupils are widely dilated, but there is no lessening of the visual field, as is usually found in hysteria. The superficial and deep reflexes are exaggerated. The muscles are in an irritable condition, and react readily to slight stimuli. Tremors, especially of the facial muscles, are common. The general nutrition of the body may be good, for neurasthenia may develop in an apparently robust individual.

Course.—The course is slow and tedious. Neurasthenia develops very gradually. At first the symptoms are only observable in the morning. Towards evening the patient feels well and in good spirits, but next morning all the old troubles

reappear. Even in favourable cases, and when rigid adherence is given to the prescribed treatment, the course may be long. If advice is either not taken or not followed, the symptoms slowly and steadily become more marked until a definite nervous collapse takes place.

Diagnosis.—Care must be taken not to confuse neurasthenia with general paralysis of the insane. In many ways the early symptoms of general paralysis closely resemble the disorder under review. Tremor of face and speech-defects are common in both; reflexes may be similarly exaggerated. The loss of the light reflex in the pupil would strongly favour general paralysis. The handwriting is affected in both, but the neurasthenic usually notices and corrects errors in spelling. Neurasthenia may be confused with hysteria. The latter has, however, very definite characteristics, and with care confusion between the two conditions should be avoided. Hypochondriasis is in some ways closely allied to neurasthenia; but though the mental aspects are much the same, the physical symptoms differ. In conclusion, the physician must bear in mind that neurasthenia may be associated with organic disease, and it should not be diagnosed until the possibility of organic disease has been excluded.

Prognosis.—The prognosis varies greatly in different cases. As a general rule youths who break down before twenty years of age recover, but have many relapses. Men and women who develop neurasthenia after fifty years of age seldom entirely regain their former vigour. Business men who break down after this age or even a few years earlier commonly have to retire from active work. The most hopeful patients are those who become neurasthenic from some definite cause during the prime of life: if they are willing carefully to follow the treatment laid down, their efforts may be rewarded by total recovery. There is, it should be added, a class of persons who seem by mental and moral qualities somewhat prone to neurasthenia. They are keen and energetic workers, and of a temperament which exposes them to further imposition in the matter of work by the selfish and idle. Many years of close and sometimes unnecessary work may dispose such persons to become neurasthenic. In such cases, when the nervous failure comes, it is often serious. Neurasthenia often

gives some preliminary indications of exhaustion. Where this is the case, the sufferer should be warned to devote less time to work and more to food and rest.

Pathology.—Nothing is definitely known as to the pathology of this condition. Auto-intoxication may play a part in its production, and this view would be favoured by the close relation of neurasthenia to fatigue states. But clearly auto-intoxication cannot be the entire cause, and we must wait until further investigations throw more light on the subject.

Treatment.—Neurasthenia can no doubt be prevented in a large majority of cases, and it is to this end that the physician must direct his energies. As this disorder develops slowly, there is usually plenty of time to warn the patient to amend his ways. Do not hesitate to state in clear language the risk that is incurred by persistence in the habits which have produced the condition. A habit of late hours must be exchanged for one of retiring at half-past ten; work to the neglect of meals must be stopped and brought within due limits; the necessity of fresh air and moderate exercise must be insisted upon, where it has been overlooked; athleticism to the extent of physical exhaustion must be brought within due bounds; study carried to excess must be moderated. Work and exercise must be adjusted, and faulty living corrected.

Further, the physician must point out that, since the disorder results from an extended period of ill-regulated living, it will require an even longer period of care and treatment to re-establish the health. When once the neurasthenic condition has declared itself, the treatment must be that of rest and good feeding. Travelling is to be deprecated until the nervous energy has shown signs of recovery. Physical exhaustion will exaggerate the symptoms; many a man has aggravated a neurasthenic condition by travelling or taking hard exercise. Bed is the proper place for a neurasthenic; he should remain there for two or three weeks. Rest in bed will often save the patient months of trouble later. Hydrotherapeutics are also beneficial in some cases, and a course of treatment by mineral waters may be given with advantage. Massage is not advised; it frequently causes fatigue without any commensurate benefit. Many patients recover more rapidly when in the care of strangers, than in their own

homes. Plenty of milk and eggs should be taken; alcohol is not required. The personal cheerfulness and hopefulness of the physician will go a very long way in assisting a neurasthenic to recover. Drugs should be given if indicated by any symptoms such as anæmia or gastritis. Insomnia must be treated, and until the sleep returns the patient cannot be looked upon as convalescent.

Acute Hallucinatory Insanity

This type of mental disorder is substantially the same as that described by Kraepelin under the name of Exhaustion Psychoses, which he subdivides into two classes, namely, Collapse Delirium and Acute Confusional Insanity (amentia). The distinction involved in this subdivision seems almost too fine for practical purposes, and the cases will be here treated under one head. The condition under review develops somewhat rapidly, and hallucinations of all senses are always a prominent symptom. It usually follows an exhausting illness, but it may occur under other circumstances.

Ætiology.—Patients with this form of insanity are as a rule very unstable persons of neurotic inheritance. Exhausting fevers, notably typhoid, and influenza, are among the most common causes. Great loss of blood and severe anæmia may produce the disorder. More rarely the account given is that the mental disorder supervened after a surgical operation; but whether the anæsthetic which was administered, or the hæmorrhage from the wound, must be considered as the exciting cause, it is not always easy to say.

Mental Symptoms.—The first symptoms that usually attract attention are that the patient becomes fidgety and restless, and does not sleep at night. After a few days a certain amount of mental confusion will be observed, evidenced sometimes by the sufferer mistaking the identity of those about him. The memory will appear uncertain, and will fail to register passing events. The power of attention suffers, and questions asked may remain unanswered unless the patient is further aroused by the stimulation of a second sense. He will stare vacantly about him, as if he were in a dream state. He smiles or weeps without apparent cause, and if questioned as to the

reason for his tears, he may say that some relative is dead or that his friends have deserted him. Within a short time hallucinations of all senses develop, the patient will announce that he sees birds flying about the room, and insects crawling on his bed; and more rarely that poison is put into his food, or that foul gases are injected into his room. The restlessness becomes more marked, and it may be difficult to keep him in bed. Consciousness becomes more and more clouded, and delusions of all kinds may be expressed; either exaltation or depression may occur. A patient in this condition may be destructive of clothing, but seldom, if ever, will attempt to injure himself or others. In occasional cases there is noisiness and intense excitement, but this condition rarely lasts for a long time.

Physical Symptoms.—The general health is poor, especially when the disorder occurs during convalescence from a serious illness. The bowels are inclined to be constipated. There is a tendency to refuse food. The pulse is frequent and of low tension. Sleep is deficient; there may even be complete insomnia.

Course.—Under treatment and with careful attention to food, sleep, and bowels, the patient slowly begins to recover after a few weeks. The restlessness becomes less acute; the delusions and hallucinations disappear, at first for a few hours at a time, and ultimately altogether. Consciousness is less clouded, and questions will be more readily answered. It will nevertheless be noticed that for some weeks the patient fatigues very rapidly, a point which should be borne in mind when the advisability of visits from friends is under consideration. Irritability is a symptom which usually persists for several weeks after convalescence is established. Attempts at letter-writing will end in failure; it is therefore wise to forbid such efforts. Sleep returns by degrees, but it may be several months before it is good either in quality or quantity.

Diagnosis.—As this disorder is one that develops during the weeks that a patient is convalescing from an acute illness, or after some severe operation, the diagnosis from other forms of mental disorder is not, as a rule, difficult. The chief danger lies in the condition being overlooked or misunderstood, and in this way valuable weeks may be lost

before proper treatment is begun. The mental disorder may at first be so slight that it is put down to general physical weakness; and even when the symptoms become clearly marked, they are apt to be explained away by the physician, if he is not fully conversant with this special malady.

Prognosis.—The prognosis is decidedly good, and the great majority of these patients recover. The mental attack may last from two to four months, but occasionally recovery takes place after a few weeks.

Pathology and Morbid Anatomy Changes.—Death seldom results from this form of mental disorder, and for this reason very little is known as to the pathology of the condition. In those cases where autopsies have been made, chromatolysis of the nerve-cells of the brain has been found; this change is, however, by no means pathognomonic, as it occurs in many other diseases. The writer is inclined to think that acute hallucinatory insanity is brought about by (*a*) deficiency in the quantity of blood, and (*b*) changes in the quality of the blood, both factors acting on an unstable brain.

Treatment.—The patient should be kept in bed, and if he is in the ward of a hospital at the time of the attack, he should be moved into a private room and isolated. Absolute quiet is necessary; visits from relatives should be interdicted. Food should be of a light and nourishing nature; if solids are refused, a plentiful liquid diet must be administered. Nourishment should be given every three hours during the day, and also throughout the night if the patient is awake. Alcohol should be avoided if possible, but if there is great weakness or if collapse threatens, brandy or champagne must be given frequently. If there is great restlessness and the pulse is rapid and low-tensioned, infusion of normal salt solution into the subcutaneous tissues of the chest or back is excellent treatment, and quickly relieves the acute symptoms. Only one pint should be infused at a time, and never more than two, otherwise alarming symptoms may develop. Hypnotics should be avoided if possible, and it is better to rely on food to induce sleep. Warm baths are most valuable in some cases in correcting insomnia. Sleeplessness may become so urgent a symptom that it is necessary to relieve it by more certain means, in which case amylene hydrate is

usually the best drug to employ. If the patient is in a very weak state, with a feeble pulse, opium is indicated, and a grain pill or fifteen minims of the tincture every four hours frequently acts with remarkable effect, and brings about a general improvement in the physical and mental condition.

When convalescence has set in, it is incumbent on the physician to lay down very stringent rules as to the visits of relatives and others. An injudicious visitor may do great harm, and cause a serious relapse. Interviews should not exceed five minutes in length, and no worrying topics must be broached. The more slow and quiet the character of the earlier stages of convalescence, the better is the result; it is very unwise to try to hurry the patient in the foolish attempt to make a rapid cure. The building-up process is of necessity slow, and it must take several months before all the bodily functions are working normally and proper sleep has returned. The body weight is a useful index as to the progress of the case, as this ought slowly and steadily to rise; as a rule by the time health is established the patient weighs considerably more than he did before his illness. This need cause no alarm, as the weight nearly always returns to normal when the daily routine of life again begins. Throughout the attack the bowels must receive careful attention, and the patient must be warned to avoid constipation in the future. If there is much anæmia this should be corrected by the administration of iron and arsenic. When exercise is taken it must be in moderation, as physical exhaustion is always reflected in an increase of mental symptoms.

CHAPTER XVI

GENERAL NEUROSES: EPILEPSY AND INSANITY; HYSTERIA AND INSANITY; TRAUMATIC NEUROSES

Epilepsy and Insanity

Epilepsy and insanity are closely allied. The factors which produce the one may also produce the other. A neurotic parent may have one child who is epileptic, and another who is insane. There may be epilepsy in one generation and insanity in the next, or *vice versâ*. About fifteen per cent. of all epileptic individuals become insane, but, apart from actual insanity, epilepsy frequently produces varying degrees of weak-mindedness. On the other hand, a person may have epileptic fits for years, and yet never show any marked mental disturbance. Petit mal, as a rule, brings about a general failure of the intellectual faculties, with profound loss of memory.

Ætiology.—We usually find a neuropathic inheritance in more than fifty per cent. of all cases of epilepsy. Insanity is commonly found in the parents of epileptics. Epilepsy begets epilepsy, and we frequently find an epileptic father has an epileptic son. Alcoholism in the parent is a potent factor in the production of epilepsy in the children. This observation has been increasingly confirmed during recent years, and lends weighty support to the arguments for placing alcoholic persons under proper restraint and treatment. Most cases of epilepsy begin before the age of twenty, and epileptic insanity usually develops before thirty-two. Females suffer from epilepsy to a somewhat greater extent than males. The stresses which may set up convulsions in predisposed persons are very numerous. At dentition they are very common; emotional disturbance, such as fright, may also give rise to an epileptic seizure. Usually the more marked the nervous

instability, the less the stress required to produce a convulsion. An acute specific fever may be the determining factor; or the exciting cause may be reflex in origin, as for example intestinal worms. A history of head-injury is found in a small proportion of cases. Finally, it is by no means uncommon to find epilepsy in the female first beginning about the age of puberty.

On the other hand, in a fair proportion of cases no exciting causes can be found, but when present they are varied and numerous, and act with greater effect upon the neurotic individual. Once a convulsion has taken place, there is a tendency to a recurrence, and with each recurring seizure this tendency becomes greater, until finally a habit is formed. The nerve-storm may be slight, in which case there is only a momentary loss of consciousness; or it may be greater, when the whole of the motor centres are involved, and there is a convulsive seizure. Between these extremes there are many varying degrees. Gross brain disease or trauma may at times cause epileptic convulsions.

Varieties of Insanity associated with Epilepsy.—Epilepsy may lead to many forms of mental disorder. (1) In early life repeated convulsions may seriously interfere with mental development, and *epileptic idiocy* or *imbecility* may result. (2) A second class to be considered comprises those forms of mental disorder which precede a fit, *pre-epileptic insanity*. (3) Some authorities believe that a fit can be replaced by some mental disturbance, and others consider that the seizure is so slight that it is overlooked in the presence of the more marked mental symptoms. This condition is known as *masked epilepsy* (*épilepsie larvée*). (4) Mental disturbances, often of a very severe type, may occur immediately after a fit, *post-epileptic* mental disorder. (5) The most common form of mental disease met with in association with epilepsy is known as *chronic epileptic insanity*. (6) Finally, the epileptic may suffer from temporary attacks of mental disorder, such as may occur in non-epileptic persons, *temporary insanity*.

Symptoms exhibited under the above Varieties of Mental Disorder.—(1) *Epileptic Idiocy and Imbecility* are terms used to indicate those cases in which early epilepsy has seriously interfered with the mental growth of the individual. Idiocy

and imbecility are relative terms, the former indicating a greater degree of weak-mindedness than the latter. Epilepsy is one of the commonest causes of idiocy, and as such is dealt with in a subsequent chapter. As has already been observed, the exciting cause of the first seizure may be of almost any kind; dentition will, however, be found to be the most frequent. In epileptic idiots the seizures may be either major or minor in character, and the latter are often more damaging than the former to the nervous system. Children suffering from epileptic idiocy are usually very impulsive and irritable, and, if not watched, may seriously injure any younger children with whom they may be associated. If the fits continue there is a steady mental deterioration, and education is exceedingly difficult. It should, however, be noted that a child may have convulsions for some years without showing any marked intellectual degeneration. If treatment is successful, the mental condition rapidly improves.

(2) *Pre-Epileptic Insanity.*—The epileptic aura, if present, is the warning which the patient receives. Though it usually immediately precedes the seizure, in some cases it may last for hours or even days. The aura may be of any kind; it may be some alteration of sensation, such as tingling or pricking sensations in the skin. Vertigo is very common and also epigastric or throat sensations. More rarely the motor system is the one affected. A patient may move round in a circle, or there may be a feeling of cramp in some group of muscles. Hallucinations and illusions of sight and hearing are often met with; olfactory and gustatory disturbances are less frequent. There are many other types of warning, but space does not permit a description here. It is, however, important to observe that the aura may be psychical in character. Sounds may terrify a patient, or 'voices' may direct him to do some foolish act. Delusions may be expressed, and false accusations have been made by persons in the pre-epileptic state. The medico-legal aspect ought to be remembered, as apart from actual violence patients may make serious charges against others, believing that they have been criminally assaulted, or insulted in other ways. Offences against the moral code of laws may be unconsciously performed during this pre-epileptic dreamy state. Violent outbursts of acute

mania may precede an epileptic seizure by some hours or days ; the excitement is usually very intense, and commonly there is refusal of food. In other cases, preceding a fit there is depression, with a general feeling of malaise, and sometimes a tendency to be suspicious and quarrelsome.

(3) *Masked Epilepsy.*—This is a term used to denote those cases in which there is no noticeable seizure. The fit is said to be replaced by some other condition, such as an outburst of excitement. Cases of automatism also come under this head. Authorities have differed as to whether the fit is actually replaced ; many believe that it is usually present, but so transient as to be overlooked. With regard to automatism, however, it is now generally admitted that this is preceded by a slight fit.

(4) *Post-Epileptic* mental disorders are of various kinds, and they have a very important medico-legal aspect. Probably epileptics are more homicidal during this stage than in any other. The ordinary coma which usually follows a fit may be absent, and be replaced by a period of automatism. Fully organised and definite automatic acts may also follow minor seizures. These patients are confused, and wander aimlessly about ; they even fail to recognise their immediate relatives. Criminal acts of almost every kind may be openly committed ; among the most common are arson, homicidal attacks, sexual assaults, and indecent exposure. Simpler forms of automatism are frequently observed ; for example, a patient will fold up his clothes, or tidy a room. On recovery he rarely remembers anything of what has happened.

Individuals have wandered long distances from their homes during the stage of automatism, and on regaining consciousness have been astonished to find themselves in another town. These patients are always totally unable to account for their conduct during the period of automatism ; they will say that they can remember up to a certain time on a certain day, and then comes a gap, over which they cannot bridge. Often the actions performed during the period of automatism show an entire absence of motive ; it may, however, be possible to read motives into some actions. In cases of crime committed in a post-epileptic condition, there is usually no attempt at concealment at the time of perpetration ; but with returning

consciousness, fear may come, and efforts be made at concealment. Epileptics who have had repeated fits, which have been followed by automatic acts, may learn the danger of the condition, and, if they have any warning of the approach of seizure, they may ask persons near them to leave. Refusal to obey such a request has been known to be followed by serious results. The automatic stage may last for a few moments only, or may continue for an hour or two. Some patients are intensely suspicious for some time after a seizure, and will strongly resent any interference. There is no doubt that a number of murders have been committed during the period of automatism following a slight fit. It is by no means easy to convince the lay mind that acts of this kind cannot be regarded as intentional homicide. This is especially the case when the seizures are so slight that they have been overlooked. The physician must largely rely on the former history of the patient, the absence of adequate motive, and the manner in which the act was committed. A history that the person has had similar attacks during which he has done extraordinary things is a point of great importance.

A violent attack of mania is another form of mental disorder which may follow an epileptic seizure. This post-epileptic excitement is often so intense that it has been named *epileptic furor*. In these cases there is usually no coma, the patient passing at once into this maniacal condition; at times, however, the excitement follows a period of sleep. A patient in this condition will bite and scratch, and make violent and even homicidal assaults; a female may try to tear out the hair of the nurses. The symptoms are those of mania of a very acute kind, and of all forms of mania this is the most violent. Fortunately, it is as a rule quite transient, passing off after a few hours.

In a smaller proportion of cases a period of depression may follow the fit. As a rule there are delusions, especially of persecution; the epileptic may revenge himself on those near to him, and in some cases may attempt self-injury. Enough has been said to show that the post-epileptic stage is frequently a very dangerous one for those who may be associated with the patient, for his confusion of mind may lead him to make either false accusations or definite assaults.

(5) *Chronic Epileptic Insanity* may be looked upon as the true epileptic insanity. Some persons, as has been observed, may suffer from epilepsy and yet show no marked mental change, or may even be capable of doing brilliant work. This, however, must be regarded as exceptional; the tendency of epilepsy is towards mental deterioration, more especially if the seizures have begun in early life. Memory begins to fail, and in time shows signs of serious impairment. Emotional disturbances of all kinds are frequent. Outbursts of anger and passion, exaltation and excitement, alternate with periods of misery and gloom. The judgment becomes warped and unreliable. The patient will speak highly of his intellectual ability, although his mental capacity is steadily failing. He is often cruel, and tends to become a moral pervert. He will lie freely, and eventually no reliance can be placed upon any of his statements.

Many patients of this class will spend much time in reading the Bible and trying to convert others. They are religiose rather than religious; in words they profess much, but their actions belie them. Their whole character is changed, and any former altruistic attributes are lost. Self is their god; they are egotistical and boastful. They become cunning and treacherous, and may revenge themselves upon the infirm and weak, and in the face of accusation deny all knowledge, and emphasise the denial with Biblical quotations. Occasionally they show great acuteness of memory, and even capacity for work, but, as time passes, these embers of remaining power burn out; mental degeneration becomes more and more marked, until there is nothing left but the lower instincts in their most degraded forms. Sexual excitement is common, and, unless carefully watched, patients of this class will practise every form of sexual vice.

(6) *Temporary Insanity.*—Epileptics, in common with the rest of humanity, may suffer from attacks of mental disorder, and, for want of a better term, we shall speak of the condition as one of temporary insanity. An epileptic may suffer from melancholia and may recover in the usual way; the attack may be an isolated one, or he may have recurrence of the condition. We do not need to go further into this subject, as such illnesses in every way resemble

acute mania and melancholia, as described in a former chapter.

Physical Symptoms.—The physical health suffers to some extent. There is a tendency to nutritional disturbances, and the body weight often falls. The gastro-intestinal system is often disordered; the tongue is furred, and the bowels constipated. Sleep is disturbed and unrefreshing.

The seizures are the most important symptoms. These may be of two kinds: (1) *Grand Mal*, or major epilepsy; and (2) *Petit Mal*, or minor epilepsy. (1) With the former there may be an aura or warning, but this is usually at once followed by loss of consciousness. The patient falls helplessly to the ground in a condition of tonic convulsions. Commonly there is a cry due to the forcible contraction of the chest muscles driving air from the lungs through the glottis. In about thirty or forty seconds the tonic spasm gives way, and is replaced by the clonic convulsion, the result of alternating contraction and relaxation of the muscles. It is not necessary in a work of this kind to enter into the minute particulars of these seizures, as they are dealt with in text-books on general medicine. Suffice it to say that as a rule consciousness gradually returns after a period of coma or sleep, though at times the latter may be absent. It is usual for a seizure to occur singly, but there may be a succession or group of seizures numbering up to a hundred or more. When the seizures occur in series, consciousness does not usually return during the intervals. The condition is known as that of *status epilepticus*, and may terminate fatally.

(2) In *Petit Mal*, or minor epilepsy, there is a brief loss of consciousness lasting for a few seconds to about half a minute. Convulsive movements are as a rule not present, and the patient rarely falls. If conversing he will suddenly stop, and his face will lose expression. When consciousness returns he may at once continue what he was saying, or may appear somewhat confused, and inquire what he was talking about. These minor seizures are very apt to recur, and a patient may have several during the course of a day. The mental faculties generally rapidly fail; the memory becomes very uncertain, and there is an increasing incapacity for

work. If definite mental disorder supervenes, the physical health may suffer more seriously.

Diagnosis.—The diagnosis of epilepsy is not always easy, especially when the seizures are of the *petit mal* type. To add to the difficulty, the fits may always occur at night. Inquiry should be made for such symptoms as the unconscious emptying of the bladder. The tongue may be examined for scars of former injury. Sudden erratic conduct or offences ill according with the previous character of the individual should always suggest epilepsy to the physician. In such cases instructions for closer supervision should be given. In the case of persons in early life it is at times difficult to distinguish between some hysterical disorders and true epilepsy. To enable distinction to be rightly drawn it must be remembered that hysterical disturbances rarely, if ever, take place when the patient is alone, and that they are commonly set up by some external influences. Assistance may also be derived from the way in which the patient falls. In hysteria the fall does not betoken the helplessness of the epileptic. Again, in hysteria there is rarely the total loss of expression seen in the epileptic. The clonic stage is not so complete in hysteria as in epilepsy, for instead of regular contractions there are irregular movements. Finally, in the place of coma there is an emotional display interspersed with symbolic and grotesque attitudes.

If there is merely mental confusion, the epileptic condition may be mistaken for that of other types of mental disorder.

In later life true epilepsy has to be distinguished from the epileptic seizures commonly met with in general paralysis. Epilepsy is not usually of such late development as dementia paralytica, but the presence or absence of other physical signs must determine the diagnosis. The pupils, speech, handwriting, and various reflexes must all be carefully examined. Again, the onset of the seizures often varies in character in the two conditions, and the general paralytic rarely has the epileptic cry.

Prognosis.—Major epilepsy is a more curable disorder than the minor form. If major epilepsy develops in early adolescence, it may often be successfully treated. As the treatment extends over three years, many persons after a

time neglect to carry out the instructions given, but those who will take the trouble are often rewarded by the disappearance of the seizures. Epilepsy the result of gross brain disease is incurable, and practically the same may be said of the minor forms of the disorder. Status epilepticus is a serious condition, and frequently ends fatally.

Pathology and Morbid Anatomy.—There is no doubt that epilepsy is the result of some disorder of the cerebral cortex. There are many theories as to what these changes really are, but at the present time nothing is definitely known. Hughlings Jackson has pointed out that, as unconsciousness is the first and may be the only symptom, the inference is that the disorder is in the highest levels, probably in the frontal area of the brain. In Jacksonian epilepsy, on the other hand, the earliest symptom is usually some movement or twitching, showing that the primary irritation is in the motor area. Hughlings Jackson further suggests that in epilepsy the fault lies in defects of nutrition, and not primarily in the nervous elements. The view that alteration of blood supply to the cortex must be held responsible for producing these nerve-storms is supported by other observers. Similar convulsions can be produced in animals by intra-venous injection of drugs such as absinthe and ammonium carbammate; or even sudden and extreme anæmia of the cortex will suffice.

Ford Robertson writes:[1] 'It is now maintained by the great majority of those who have made special study of the subject, that there are two great factors in the pathogenesis of the disease in the human subject; namely, (*a*) a special defect of cerebral organisation which predisposes to the epileptic discharge, and (*b*) a toxic action which determines the discharge. Some believe that the toxins act directly upon the nerve-cells of the cortex, others maintain that they influence these elements indirectly by producing cerebral congestion, or cerebral anæmia from vaso-motor spasm.'

He briefly sums up the present position of knowledge regarding the toxic basis of epilepsy as follows: 'It is fully proved that the fits are preceded and determined by the accumulation in the blood of certain toxins, the exact origin and nature of which is still uncertain, although

[1] *Pathology of Mental Disease.*

a great amount of light has now been thrown upon the subject. It is probable that the toxins consist of various substances, and that they differ considerably in individual cases. Krainsky has, however, obtained very strong evidence in support of his contention that in many cases the essential irritant is ammonium carbammate; he appears to have disproved the theory of Haig that epilepsy depends upon a retention of uric acid in the blood. In persons who are subject to epilepsy, metabolism tends to be imperfect; the average elimination of azotised products, phosphoric acids and chlorides, is below normal in the inter-convulsive periods; there is diminished excretion of azotised substances in the prodromal period; after a fit there is increase in the density and acidity of the urine, and in the quantity of all the regressive products of metabolism contained in it; the urine of epileptics is constantly more toxic than normal urine when injected into lower animals; the toxicity increases in the period immediately preceding the fit, and is in strict relation to the gravity of concomitant gastro-intestinal disturbances; after the fit the urine is hyper-toxic (Agostini). The formation of the toxins is greatly favoured by gastro-intestinal disturbances, which, indeed, are able to determine the occurrence of fits; these can be prevented, or greatly diminished in numbers, by washing out the stomach, and by the use of purgatives, saline enemas, &c. (Agostini). The gastro-intestinal disturbances consist chiefly in the occurrence of abnormal putrefactive processes in the contents of the alimentary canal. It has been proved that before a fit occurs there is an increase in the excretion of ethereal sulphates, which may be taken as the index of the amount of putrefactive change occurring in the alimentary canal (Galante and Savini). It has also been shown that in association with the accumulation of toxins in the system, and in the anticipation of a fit, there is constantly a diminution in the alkalinity of the blood (Lui, Charon, and Briche).'

Clearly all the work of the present time goes to corroborate the view that the epileptic convulsion is largely dependent upon some vaso-motor disturbance in the cerebral cortex. The writer does not think that toxins primarily play so important a *rôle* as is suggested, though they may ulti-

mately prove elements which largely contribute towards the recurrence of the fits. He believes that in some neurotic persons there are areas of the vaso-motor system which are more liable to reflex disturbances than others. In the milder forms of Raynaud's disease local syncope may be observed to occur in the fingers, hands, feet, and other parts, the result of vaso-motor spasm in isolated areas. Probably paroxysmal hæmoglobinuria is another example of this same condition. But apart from actual disease there is no doubt that certain nervous individuals are liable to develop localised areas of coldness, due to some vaso-motor disturbance. Sexual congress probably supplies us with an excellent example. During coitus, or immediately after, some persons have general rigors, or the affected parts may be limited to the lower extremities, or one limb. Again, the sexual orgasm may be followed by a definite epileptic fit, and—another point of importance—the seizures may be confined to the performance of the sexual act. Do not these observations throw some side-lights on the origin of the disorder? The seizures cannot be the result of toxins in the instances last given. No doubt toxins, and especially those derived from the gastro-intestinal tract, in many cases do play a very important part in recurring epilepsy, but the writer feels that the *rôle* they play is that of an irritant on an already unstable mechanism, and that other reflex disturbances may act with equal potency. In this way it may be concluded that epilepsy is to a certain extent accidental, and dependent upon an unstable condition of the vaso-motor system in the cortical areas of the brain; and further, that similar instability in other parts of the vascular system may be found, the effects produced depending upon the importance of the areas affected.

With regard to the morbid anatomy very little is really known. Bevan Lewis has made a careful study of the brains of epileptics, and states that he believes that the primary change is in the cortical cells of the second layer. He describes changes of a fatty nature in the nuclei, and in a more advanced stage there is vacuolation, which may include the cell itself. This condition is not peculiar to epilepsy, as Bevan Lewis himself states, and most observers look upon it as either of immediately ante-mortem or of post-mortem development.

Some authorities have drawn attention to the frequency of differences in weight of the two hemispheres. Variations in the arrangement of the convolutions have also been noted.

Treatment.—The treatment of epilepsy is fully described in text-books on general medicine, and only a short description will be given here. The whole of the patient's mode of living must be carefully regulated, and instructions must be given as to clothing, exercise, and dietary. The clothing must be as light and loose as possible. Regular exercise must be taken, but fatigue avoided. Exhaustion will always tend to bring about a seizure. Food must be light and nourishing; meat should not be taken more than once a day. Alcohol is contra-indicated and must not be allowed. The bowels must act daily, and if by the evening there has been no relief, a glycerine suppository or a soap and water injection should be administered. Attention to the bowels must never on any account be neglected, and the physician cannot too forcibly impress this instruction on the patient.

The writer strongly recommends that sulphate of magnesium be given in conjunction with bromide of potassium, as he has found it to be a most valuable drug in the treatment of epilepsy. The dose of bromide of potassium varies according to the age of the patient, but for an adult the following prescription may be tried: pot. brom. gr. xv, mag. sulph. gr. x, aqua ad ℥i, t.d. The bromide can be reduced or increased according to requirements. At times, especially in cases of minor epilepsy, two larger doses of pot. brom. given twice a day will succeed when the three smaller doses fail. Full instructions must be given on all matters relating to the patient's safety.

The treatment must be kept up for two and a half to three years after the last fit. If the treatment of epilepsy is begun early and strictly carried out, the prognosis is by no means bad, for a fairly large number of these patients recover.

If insanity is associated with epilepsy, it is frequently necessary to place the patient under care. For the pre-paroxysmal attacks, chloral hydrate should be added to the bromide of potassium as soon as the mental symptoms show themselves, and it is wise to keep the patient in bed. Chloral hydrate is

also useful in cases of status epilepticus, and should be administered per rectum.

The treatment of epileptic insanity to a certain extent depends on the type of the mental disorder. Sudden violent impulses must be guarded against, and the patient must be under constant supervision by night and day.

Hysteria and Insanity

Hysteria, so far as the public mind is concerned, has practically become a popular term which includes all divers disorders, physical or mental, which are too obscure to be otherwise explained. Many persons use the word 'hysteria' to denote various forms, often serious forms, of mental disorder. This is largely due to the continued use, by some members of the medical profession, and more generally by the public, of the obsolete terms 'mad' and 'lunatic,' and also to the dread with which mental disorder in anyone belonging to him is regarded by the layman, to whom by tradition it is a condition rather of shame than of disease. In the present state of public education it is not a matter of wonder that recourse is had to vague language to avoid the stigma involved in the admission that a relative is insane. So the patient is called hysterical. From a scientific standpoint this increasing tendency to the indiscriminate denomination of various classes of insanity under the term 'hysteria' is to be deplored. Regret may also be felt that such an innocent subterfuge should, as it undoubtedly does, militate against the more speedy education of the public mind to a recognition that mental disorder is in every way comparable to physical disease. Hysteria is a disorder with very definite symptoms, and, unless these symptoms are present, the term is inapplicable. It has a bodily and a mental aspect; when the latter is very pronounced, the former is apt to be overlooked, and *vice versâ*. When actual insanity supervenes, it is better to look upon it as a complication of hysteria rather than a special form of disorder, though clearly the mental disorder will be coloured by the phenomena peculiar to hysteria.

Ætiology.—Hysteria may occur at any age, but it is more common in early adult life. A history of a neurotic inherit-

ance is frequently obtainable. An hysterical mother may bear offspring, who in later life also become hysterical, and insanity or epilepsy in the parents may lead to hysteria in their children. In brief, the same disorders which may predispose to insanity may predispose to hysteria. In the individual the stress which produces the disorder may be either mental, moral, or physical; it needs no argument to show that the stress required to produce the condition is in inverse proportion to the stability of the nervous system.

Hysteria is much more common in early life, and it is often due to ill-directed education. For true stability, it is necessary that growth should be slow and steady, and that the mental development should not be forced along without regard to the physical. Bad habits should be corrected at once. A child should be treated as a child: regular hours of rest should be insisted upon; the modern tendency to permit young girls to stay up late at night, attending dances and theatres, is a grievous error; all too frequently it sows the seeds of future years of ill health and disappointment. Never let it be forgotten that rapid development usually implies early decay; the tendency should rather be to retard than to hasten evolution. A purposeless life conduces to hysteria; it is well that all young women should have some interest, even if it may never be necessary for them to earn their own livelihood. There is no direct connection between hysteria and any disease of the sexual organs; in fact, it is by no means clear that the sexual organs play any special part in the production of the disorder. Hysteria occurs for the first time in both the single and married, and marriage is certainly about the worst remedy that can be prescribed for a young hysteric.

The various stresses which may act as predisposing or exciting causes in determining an attack of hysteria need not here be detailed; they will be found in the chapter on general causation. Hysterical symptoms in men frequently connote some serious disease, such as general paralysis of the insane.

Mental Symptoms.—Hysterical individuals are usually social units; persons who keep a good deal to themselves, though constantly craving for the sympathy of others. In hysteria, as in many other forms of mental and physical disease, 'subject-consciousness' is increased, accompanied by a corre-

sponding fall in 'object-consciousness.' The patient becomes introspective and self-concentrated, and jealous of personal comforts. She is intensely exacting and fault-finding, and a constant source of irritation wherever she may reside. Attention is affected; there is hyper-attention regarding self, and inattention to surroundings. In an earlier chapter it has been explained that attention is absolutely necessary to action, and any disorder which leads to inattention may make the patient appear to be apathetic and indolent. The hysterical woman is self-centred and inattentive to her surroundings, and probably this in no small measure accounts for her inactivity. The memory is affected in some cases, but by no means in all. There is a tendency to exaggerate; it is not exactly a paramnesic condition, such as is seen in the romancing of the alcoholic, but reliance cannot be placed upon the statements of the patient. The falsehood is not always wilful; perhaps an incident is only partially remembered, and the account of it may thus be distorted. Total amnesia may occur after a fit, and there may be a period of time concerning which the patient remembers nothing.

The hysterical woman is very emotional, and has violent outbursts of excitement on slight provocation. Her mental instability is exhibited by these attacks of laughing or weeping, and at times she is quite unable to control her emotions. These hysterical displays rarely, if ever, occur when the patient is alone, but they are by no means uncommon in the society of others. For this reason many persons believe that these outbursts are under the control of the patient. This in no way follows, and is not as a rule the case. Normal control may never have been acquired, or it may have been lost as the result of the illness.

The vagaries of conduct vary in degree according to the severity of the attack. In other words, the conduct is in keeping with the general feelings of the patient. The individual may merely be apathetic and indolent, or may be markedly erratic. There is lack of purpose; at one time excessive activity, at another idleness. The patient is very impulsive, and acts upon the fancy of the moment. Judgment is weak and unreliable. Suicide is often threatened, but rarely attempted. On the other hand, hysterical individuals not uncommonly inflict

injuries upon themselves, probably from a desire to obtain the sympathy of others.

From time to time hysterical patients may be met with who seem to have a dual existence; or it may be that the second state is merely somnambulistic. While in this second state, a woman may do all kinds of extraordinary things; she may steal, set fire to the furniture or house, or wander about half-clothed. When she returns to her normal condition she may remember little or nothing of what she has done. The memory in each state is often distinct: when she returns to the second state she thinks and acts as she did when previously in that state. Occasionally it seems that the second personality knows all about the first, but the latter knows nothing about the second.

Insanity of the delirious or maniacal type may supervene. In many ways the condition closely resembles that of ordinary acute mania, with the characteristic symptoms of hysteria superadded. Patients of this type are usually happy and cheerful, very talkative and inquisitive, often very incoherent, quick in their actions, and spiteful at times to their fellow-patients. They are decorative in the matter of dress, and are the Ophelias of asylums. Visual and auditory hallucinations are not uncommon. From time to time there are outbursts of impulsive violence and passion, during which the patient is destructive of clothing and furniture. Gesticulations and dramatic attitudes are common symptoms. A patient suffering from hysteria may gradually lapse into a weak-minded state and develop all kinds of degraded habits. In some cases the mental disorder is limited to a few days before or after the catamenial period, and may merely be of the type of a general confusion, or it may take the form of acute transitory excitement.

Physical Symptoms.—The physical symptoms of hysteria are so numerous that only a brief reference to them is possible; the reader must turn to works on medicine for a more minute account. The digestive organs may show various disturbances. Vomiting may be an urgent symptom, and one that is by no means easy to treat. Anorexia is common, and there may be absolute refusal of food. Recourse should be had to artificial feeding by means of the œsophageal or nasal tube;

otherwise the patient will die from inanition. The circulatory system may be disordered; the patient may complain of palpitation and flutterings in the region of the heart. The respiration calls for no special notice. The secretions may be affected, and are usually excessive in amount. The urine is greatly increased in quantity. Hysterical 'anuria' has been recorded, but it is a very rare symptom.

The special senses and sensations in general are usually in some way altered in hysteria. From the standpoint of insanity, this symptom is of importance, when it is remembered that it is largely from sensations, and ideas of past sensations, that the knowledge of 'self' is derived. Altered sensations are a common cause of illusions, and these disordered sensations may be the basis of many of the erroneous ideas expressed by hysterical patients. The sensory phenomena may be of all kinds. Anæsthesia may occur either locally or in widely scattered areas; it may be confined to skin surfaces or extend more deeply and lead to analgesia. Hemi-anæsthesia, especially of the left side, is not an uncommon symptom. The special senses may similarly be disordered; the patient may be only able to smell with one nostril, or taste on one side of the tongue. The field of vision may be limited in area. Hyperæsthesia is sometimes found. Neuralgia and headaches may also occur; local acute pain in the head may take the form of the well-known 'clavus.' Complaints of areas of local pain are sometimes made, more especially in the spinal regions and various joints; the latter may become quite fixed in consequence. Ocular and visual disturbances are very numerous, and special reference may be made to photophobia and, as occasionally occurs, complete blindness in one or both eyes. Loss of vision for colours is a characteristic symptom. If the vision is tested by a perimeter, the visual field will usually be found to show concentric lessening.

The motor phenomena, like the sensory, vary in severity. Adductor paralysis of the vocal cords may lead to aphonia. Paresis or paralysis may occur locally, or may affect several limbs. Commonly the whole limb is paralysed, or there may be loss of power in both extremities, with total inability to walk. The knee-jerks are never absent in hysteria, but they may be exaggerated. True ankle clonus probably never occurs in this

condition. The plantar reflexes are usually absent, and this symptom is of diagnostic value. Babinski has pointed out that normally gentle stimulation of the skin of the sole of the foot causes a flexor movement of the toes, that of the great toe being most marked. When organic disease is present, there is an extensor movement. Hysterical patients either show flexor movement or no response at all. If flexor movement is observed, the case may be looked upon as functional; if the toes are extended, organic disease is indicated.

To return to the various forms of paralysis: they are unattended by any rapid wasting of the muscles, and there is no fibrillary twitching of the muscles. Electrically they show no reaction of degeneration. Contracture of a severe kind may occur in hysteria. Flexion of the wrist and fingers is frequently observed. In the lower extremities the limbs may be doubled up. Charcot points out certain distinguishing features, which will help the physicians to diagnose functional contractures from those which result from organic disease. In the former class (*a*) the onset is more rapid, and its appearance may be determined by some slight injury or nervous shock; (*b*) the contracture is often very extreme, and in the case of the fingers the nails may be driven into the palms; (*c*) the contracture does not improve or disappear during or after natural sleep; (*d*) anæsthesia, unless pressed very deeply, does not cause relaxation. Todd has pointed out a difference in the gait of an hysterical hemiplegia, as distinguished from that of the sufferer from organic disease. The former merely drags the limb, while the latter swings it round in order to clear the ground.

Among hysterical patients tremors and spasms are sometimes met with. Retention of urine is a common symptom, but if left the bladder usually empties itself, though in severe cases a catheter may have to be used. Convulsive seizures are by no means uncommon, and are frequently preceded by a sense of suffocation. They vary greatly in severity, and may be so mild as to consist merely of outbursts of uncontrollable weeping or laughter, accompanied by general agitation and restlessness. Seizures may be more severe, and be preceded by an 'aura hysterica,' which usually consists of some abdominal pain or globus. On the access

of the fit, the patient falls, but not so helplessly as the epileptic. There is apparent loss of consciousness, but the corneal reflexes are present; the patient may resist being moved. Again, in the second or clonic stage, the condition differs from epilepsy in that the movements are frequently purposive, and the patient may throw herself about violently. The hysterical seizure usually lasts a long time until exhaustion supervenes. Urine is seldom, if ever, unconsciously passed. There is a still more severe form of seizure known as the 'hystero-epileptic fit.' The attack when fully developed consists of four stages. The first is the *epileptoid*, and begins with definite tonic muscular spasms; the features become distorted, and there may be interference with respiration. Within a short time the second phase of the fit develops; in this the patient goes through extraordinary contortions (*the period of clavinism*), and may arch the body so that the head and heels meet. During this stage there may be violent screaming. The next phase before long appears; in this the patient seems to react to her thoughts, and takes up various attitudes (*attitudes passionnelles*). Probably throughout this stage she is unconscious of her surroundings. The last phase is one of *mental excitement*. If definite insanity supervenes, many of the subjective symptoms may disappear, and so add in some measure to the difficulty of diagnosis.

The physical symptoms vary in severity. If there is no refusal of food the patient does not usually lose weight very rapidly. Sleep is not always bad. The catamenial functions are as a rule disordered, and the mental symptoms commonly show a periodic tendency, being much worse either immediately before or after menstruation. The various physical symptoms need not be minutely described, as they are common to other insanities.

Course.—The course of the disorder varies; recovery may be rapid, but there is a great tendency to relapse, and many cases terminate in permanent weak-mindedness.

Diagnosis.—Hysteria has to be distinguished from organic disease, which may be complicated by hysterical symptoms. Usually the incongruity of the physical signs are of great assistance in forming a right diagnosis. For example, a case

of total paraplegia may occur without any bladder symptoms. The chief points to be considered are: the sex, age, condition of reflexes, the concentric lessening of visual fields, and the incongruity of the sensory and motor disturbances. The hysterical fit can usually be stopped by use of the faradic current, or by pressure on the inguinal region. Hysteria, when well developed, is very easily diagnosed; it is in the early stages that the difficulty arises. The mental state is helpful in arriving at a true diagnosis. The reader should refer to a text-book on medicine or nervous-diseases for a full account of hysteria, as space merely suffices here for a brief description of the disorder.

Prognosis.—It is very difficult to forecast a case of hysteria. As the patient is a neurotic and unstable individual, recovery may be rapid even when the condition seems serious. On the other hand, relapses are very probable. If the patient can be removed from home and placed under proper treatment, the prognosis is usually good. To treat an hysterical woman in her own home is usually disappointing both to the physician and friends. Constant refusal of food is a bad symptom, and unless firmly dealt with, the patient not uncommonly dies.

Pathology.—The pathology of this condition is very obscure. Some authorities have tried to explain hysteria on physical grounds, others from the psychological standpoint. Mœbius looks upon hysteria as primarily a congenital morbid mental state, and holds that the physical symptoms are secondary, produced merely by the disordered ideas.

Treatment.—The treatment of hysteria is both prophylactic and curative. With regard to the former, much can be done by parents and teachers in the early education and teaching of the young. If a child is known to be unstable, or if the family history of a child is unsound, special care must be taken that the education is upon broad lines. As much attention must be bestowed on the development of the body as on the mental training. As a general rule an ill-developed body connotes an enfeebled mind; for it must be remembered that the brain is dependent upon the various systems of the body for receiving its due share of nourishment. Formerly the necessity of attending to the

physical development during early adult life was too frequently forgotten; girls were remarked rather for their frailness than their good physique. The tendency of the present age is to remedy this evil, though care must be taken not to allow the pendulum to swing too far in the opposite direction.

To pass on to curative treatment: when the case is known to be one of hysteria, there are certain general rules to be followed. Never fail to treat the patient as one suffering from some illness. Never allow a suggestion of malingering to be breathed. There are two damaging consequences if such an idea reaches the patient. In the first place, it is, as a rule, unfounded; in the second, whether it be well or ill founded, the knowledge that you have ventured such a suggestion will infallibly forfeit your hold upon the patient. Too much sympathy is bad, and this is where home treatment so often fails. A patient should be treated firmly but kindly. Constant encouragement is required: though it may be quite impossible for patients to throw off apathy and rouse themselves, as they are usually told to do, encouragement may induce them in their better hours to employ themselves, and thus turn their attention to things outside themselves.

Hysterical patients are often most irritating and annoying, and it is difficult not to believe that there is method in their conversation and conduct. Apart from its being uncharitable, it is unjust to consider or treat them as normal beings. Their mental aberration is part of their complaint, and by this they should be judged. If possible the patient should be placed with strangers. Her life should be so regulated as to provide for early retirement to bed; diet should be liberal and of a nourishing nature, and plenty of milk should be taken. Exercise should not be excessive at first, and travelling is decidedly bad. Games such as golf and hockey are useful in assisting recovery when the patient's general physical condition renders it possible. If there is great bodily weakness total rest in bed is necessary, and at times complete isolation from friends is advisable. Weir Mitchell treatment, or some modified form of it, is useful in some cases. The physician should always impress upon the patient that he thoroughly understands the illness, for it must not be forgotten that the hysterical person is very 'suggestible,' and will

quickly decide whether confidence may be reposed in the medical attendant.

If possible the treatment should be kept on broad lines. Baths of all kinds are frequently very beneficial, and in some cases electrical treatment may be employed with advantage. Local treatment or the treatment of vague symptoms is unwise, as it is apt to direct attention and provoke concentration on the ailment in question. The value of hypnosis is very doubtful; in many ways the results of its employment are not encouraging. It is very difficult to get the patient hypnotised to any very great depth. The attention is always defective in hysteria, and this alone interferes with successful hypnosis. Drug treatment is valuable chiefly from its moral effect, and greatly assists the general routine. Whatever is done must be done actively, for the patient must never be allowed to lose confidence either in her physician or nurses. Marriage should never be recommended; it usually aggravates rather than alleviates the condition. If the mental symptoms become serious it may be necessary to resort to asylum treatment. Refusal of food should at once be dealt with, especially if the patient is losing weight. Forced feeding by means of the nasal or œsophageal tube should not be delayed if necessary; a single feeding by such means may have a useful moral effect.

Traumatic Neuroses

The whole subject of traumatic neuroses is one which has exercised the minds of both the medical and the legal professions for many years. It is a matter of no small concern to insurance companies and large employers of labour. Great surgeons have discussed the question and expressed diverse opinions, but the subject is perhaps more properly within the province of the physician, who has made mental and nervous disorders his special study. So many traumatic neuroses are obscure nervous complaints, and in many instances are purely mental in character. Unless the investigator is thoroughly conversant with the various disorders of the mind, he is apt unwittingly to misinterpret real symptoms into foolish fancies, and misconstrue definite signs of disorder into pure imagination. Again, if it is true that post-traumatic states are the

happy hunting ground of the impostor and adept malingerer, surely he can only be met by the physician who knows true mental disorder when he sees it.

Some traumatic neuroses are due to gross lesions, and come within the province of the surgeon ; but where the condition is rather one of functional disorder of the mind, the opinion of the mental physician must necessarily carry greater weight. Oppenheim, in 1889, showed that there were in reality two classes of cases following traumatism, viz. those with organic injuries, and those which were not marked with any gross lesion. To the latter, to which he applied the term *traumatic neuroses*, this chapter specially applies. Many writers prefer to treat all cases of functional nervous disorder of a traumatic origin under the head of hysteria or neurasthenia. It is true that the condition of many of these patients so closely resembles that of the neurasthenic that it may be impossible to distinguish between them. For all practical purposes no difference need be made either in the name given to the disorder or to its treatment, if it be recognised that neurasthenia is a real and definite disorder. On the other hand, there are many cases due to traumatism which cannot be rightly looked upon as suffering from true neurasthenia.

Ætiology.—The apparent injury to the head may be very slight, and in some cases none can be discovered. The base of the brain may be concussed by the patient falling heavily on his feet or gluteal region, or by some other severe physical shock. In many cases there is a history of a very definite head-injury followed by a period of mental confusion or absolute unconsciousness. Westphal believes that there is always some organic basis to be discovered, but most authorities disagree with this view, and consider that any subsequent neurosis may be purely psychical in origin. The effect of the mental shock must not be lost sight of ; it may occur at once, or may not apparently develop for some time. In the latter class of case there is usually some mental change, but so slight that it is either overlooked, or, if observed, does not receive the recognition which its importance warrants. In this lies a great pitfall for the unwary. It must be admitted to be within the bounds of possibility, or even probability, that a severe fright or other great emotional disturbance, however

brief its duration, may have such an effect upon the nervous mechanism that its functions are not afterwards carried out as they were before the shock. For a time the errors of action may be compensated for in other ways, and therefore little or no change be noticed.

In cases where there has been severe shock or concussion of the brain, the acute symptoms may pass off after a few days, and the patient may appear to be apparently well, and remain so for some weeks or months. Later other nervous and mental symptoms may develop. The question that is always asked is, How do you account for this period of health if the later symptoms are produced by the accident? Clearly the answer must be, that this apparent recovery is only from the urgent and acute symptoms, whereas the later sequelæ are of slow development. Further, the restoration above referred to is rarely a complete recovery, and usually several abnormal mental symptoms are to be observed.

In some cases the accident is followed by a period of insomnia, which in time gives rise to mental disturbances of varying degrees. Alcoholics and syphilitics are more liable than others to suffer bad effects from injuries to the head, resulting from blows or falls. A cranial injury may be followed within a short time by symptoms of general paralysis, but in this event the accident is only the determining and not the primary cause of the disease. Alcoholic intemperance without doubt plays a most important part in leading to bad effects after head-injuries. Some persons who have had a head-injury are in the future unable to take any stimulant without exhibiting some temporary mental aberration, and this disturbance may become of a more permanent nature.

To sum up: it is impossible to foresee what the effects of a head-injury, whether slight or severe, will be, for there are so many factors which may contribute to the sum-total of the effects of an accident. There is the mental constitution, which may be of such an unstable nature that a severe fright or cerebral concussion may give rise to an acute or chronic form of mental disorder. There are, too, many acquired conditions, in which must be included the effects of previous mental or physical illness, intemperance, and indirect stresses, such as domestic loss and worry from straitened circumstances. All

or any of these may contribute to produce mental disorder in one who has had concussion or injury to the head.

Mental Symptoms.—Intellectual disorders may at once succeed the accident, or they may slowly develop as the immediate symptoms pass off. In many cases it is only after several weeks or months that the mental change is to be recognised. The patient becomes very irritable and querulous. He may formerly have been placid and good-tempered, but now he is always complaining and fault-finding. Slight sounds irritate him and 'get on his nerves.' He is readily fatigued, and the memory is uncertain or may be distinctly bad. He is easily distracted, and a prolonged effort of attention is impossible. In some cases the mind is in a constant state of confusion, with total inability to grasp the purport of any communication. The once successful business man becomes an absolute failure. Despondency and even actual depression are common symptoms. Attempts at self-destruction may be provoked by the feeling of inability to work, and the idea that a continuance of life means only a burden to all concerned. Vague fears may haunt the patient. After an accident some men become the victims of all kinds of obsessions, from which they cannot escape. Hypochondriacal ideas are frequently to be found in these patients, and they may imagine that they have divers forms of disease as the result of the shock or accident. In very severe cases the condition may be one of progressive dementia.

Physical Symptoms.—The physical disturbances are largely subjective. Headache is very common, and may be almost continual or confined to times when work or concentrated thought is attempted. The patient often complains that he is unable to read, as the letters all run together. Ringing in the ears may cause much annoyance. Sensation may be affected. Some of these patients suffer from pain in the back of the neck or in the lumbo-dorsal region. Fine tremors can usually be observed in the tongue, face, or fingers. Bladder troubles, for which no definite cause can be discovered, are by no means rare. The general health usually suffers, and the body weight falls. The appetite is bad, and chronic dyspepsia may develop. Sleep may be very disturbed, and is deficient in quality as well as quantity.

Course.—The course is usually a long one. Months may pass, and yet there is little or no improvement. In the favourable cases the powers of attention and thought begin to return, and the continual sense of fatigue disappears. The memory becomes more accurate. The body weight increases, and all other physical disturbances pass away.

Prognosis.—There is probably no disorder which tests the prognostic powers of the physician so severely as this complaint. It has already been pointed out that there are many factors to be considered before a decision can be made. The severity of the accident is undoubtedly of importance, but the past and present history of the person who has been injured must be duly weighed.

There are two judgments to be made—(*a*) what is the immediate prospect? (*b*) what is the ultimate prognosis? Recovery may in some cases take place after several months or years; others may remain mentally crippled for life, and yet be capable of enjoying life so long as they have not to earn their living. These are the cases which the lay mind fails to understand. The fact that a man looks strong or healthy and can play golf or other games connotes, to the mind untrained in mental disorders, that he is equally capable of work if he would only direct his attention to it. But this is the difficulty; he cannot concentrate his attention for more than a few moments together. The working of the brain is very subtle. It does not require a great shock to disorganise it, if the shock is applied in the direction which will cause the greatest damage. This is a point which is apt to be overlooked. Almost everything, animate or inanimate, is more vulnerable if struck in a particular direction; if the blow should chance to come in that direction the force required to do damage may be very slight. Again, it does not follow that, because a blow has not been severe enough to injure the stronger structures, the finer mechanisms have not suffered damage. It is quite conceivable that an injury to the brain may be such that only the highest functions are affected, and that those more organised are to a greater or less extent left intact. In brief, the power of concentrated attention, the attributes which go to make a sound memory for recent events, control, and the like, may all suffer, and yet

the grosser functions, which have a greater hold on the organism, may remain undamaged.

Diagnosis.—The value of making an accurate diagnosis lies less in distinguishing between this complaint and neurasthenia or some other disorder, than in ability to detect the malingerer. Insurance companies and employers of labour are particularly liable to fraudulent claims by persons who hope to get substantial damages for injuries received. By all means let care be taken to frustrate the plans of the pretender, but in doing so it is important not to do wrong to an honest man. The malingerer can usually be detected by the incongruity of the symptoms of which he complains. It is the whole picture which indicates whether a case is true or false, and not one or two isolated details. The patient may lay stress on certain points which especially attract his attention, but inquiry may establish other changes, mental or physical. See the patient and the friends separately, and note whether their stories agree. In examining the various persons, inquire for the presence of unlikely symptoms: the malingerer may by his answers declare himself. Never show any surprise at an answer given. Let the patient tell his own story first, and avoid leading questions.

Treatment.—The treatment must be on general lines. Complete rest in bed for a month or six weeks is frequently very beneficial. In any case, there must be absolute cessation of all work, and all business matters should as far as possible be avoided. If any litigation is pending, the patient must leave all arrangements to his solicitor and friends. Massage and gentle exercise are beneficial in some cases; others are more benefited by a course of baths. Diet should be liberal and of a nourishing nature. Meals should be frequent and not too large in amount. Food must be taken at night. In severe cases it is advisable to have the patient treated in some nursing home or institution, entirely removed from his friends. When the physical health is fully re-established, some light employment may be attempted, but fatigue must be avoided. The patient must be encouraged to look for complete restoration to health. Let it always be borne in mind that recovery cannot be hastened; too early attempts at work only lead to disappointment and an aggravation of the symptoms.

CHAPTER XVII

OBSESSIONAL INSANITY

Several names have been used to denote the disorder about to be described, those most commonly used being 'obsessions' and 'compulsive ideas.' Hack Tuke defines the condition as follows: 'Imperative ideas are morbid suggestions and ideas imperiously demanding notice, the patient being painfully conscious of their domination over his wish and will.' Legrain asserts 'that impulse bears the same relation to acts that obsession does to ideas,' and further states 'that every cerebral manifestation, either of the intellect or of the affections, which, in spite of the efforts of the will, forces itself upon the mind, thus interrupting for a time or in an intermittent manner the regular course of association of ideas, is an obsession.' The same writes states 'that two elements are indispensable to obsession: (1) a centre which suddenly and isolatedly enters into functions, its action not being required by the mental needs of the moment; (2) temporary impotence of the will to remove this obsession.'

The intellectual powers are usually good. Almost everybody at some period of life has probably suffered from imperative ideas in a mild form. Obsessions indeed afford an excellent example of the fineness of the line which separates sanity from insanity. Take, for instance, a man who, as soon as he has turned the gas off at night, wonders whether the tap is properly shut off, and returns to inspect it, and no sooner has he again left than doubts creep into his mind, and once more he feels compelled to examine the tap. The normal man may return once or even twice, but if the night is spent in repeated inspections the condition becomes so pathological that it is necessary for the person to be placed under care.

Imperative ideas cannot be looked upon as necessarily indicative of insanity. This question must be decided upon other

considerations, e.g. whether the patient is able to look after himself and earn his own living, whether he is able to direct his thoughts to other things, or whether the obsession leads to serious depression or suicidal feelings. Many persons with obsessions are able to follow their usual occupations notwithstanding the intermittent return of the troublesome ideas.

Ætiology.—A neuropathic inheritance is to be found in the majority of persons who suffer to any serious extent from imperative ideas. They may occur in the stable man, but he is able to put them aside and ignore them. Ill health tends to strengthen them and to render them more formidable; the power of resistance is weakened, and the morbid fears and compulsive thoughts act with greater force. Fatigue will induce imperative ideas. The writer has known several students whose minds were always dominated during examinations by imperative ideas, which, however, quickly disappeared or became insignificant when the special period of stress was over. Nevertheless, it must be borne in mind that a temporary condition may become more permanent; and it is well not to treat too lightly mental disturbances, however trivial, when they occur in unstable persons.

Varieties.—There are many kinds of imperative ideas; the more common ones will be referred to when describing the mental symptoms. Westphal has divided obsessions into three divisions: (*a*) Those which are almost entirely connected with thoughts, such as 'folie du doute,' when they take the form of questions; (*b*) those which give rise to certain actions; (*c*) impulsive obsessions, which occasion immediate action without results being weighed. Other writers divide imperative ideas into motor and sensory varieties: the motor taking the form of touching things, and the like; and the sensory, ideas such as the association of colours, smells, &c., being connected with some particular occurrence or individual.

Mental Symptoms.—Obsessions of a mild type are to be found in a large number of persons, and consist of such ideas as the following: 'If I do not do such-and-such a thing in such-and-such a way, it will bring me bad luck,' or 'I must wear this trinket to-day, otherwise some ill fortune may overtake my son or daughter.' Obsessions may appear purely in actions, such as touching certain things as they are passed in

walking, or counting the footsteps, or walking on the cracks in the pavement, or trying to avoid them and keeping only on the flags themselves. Turning off the gas at night has already been alluded to as a common type of imperative idea. The above are so frequently met with that they can scarcely be looked upon as pathological, for they in no way interfere with the daily life of the person suffering from them.

Somewhat more serious ideas are the various dreads not infrequently observed. The dread of large open spaces (agoraphobia), or closed spaces (claustrophobia), or the fear of being in high places (acrophobia), and the nervous dread of certain animals or insects (zoöphobia). Another type of obsessions is the constant dread of a sudden impulse to use blasphemous or other wrong expressions (coprolalia). This type of imperative idea may seriously affect the life and conduct of the sufferer, as he not infrequently withdraws himself from society on account of the ever-present dread. When the above-mentioned fears become marked, they slowly usurp the whole attention of the patient. The woman who is in constant dread of fleas spends her whole time in searching her clothes for these creatures; she asks that her garments may be fumigated; she will not sit down on any seat, lest perchance a flea may be upon it. A condition closely allied to this is the perpetual fear of some dirt or contagion; this patient will always be washing himself, and cleansing the various utensils and dishes from which he takes his food. The man who dreads open or closed spaces may become very agitated whenever he finds himself in one, and he may rapidly become sick and faint. The writer knows a man who has been fined several times for stopping an express train, the cause of his doing so on each occasion being the sudden fear of being shut up in the confined carriage.

Another form of imperative idea which is more common among business men is the constant uncertainty as to whether every letter has been sealed in its proper envelope. This idea may give rise to great mental torment; such a sufferer may be unable to rest until he has telegraphed to his various correspondents to know whether they have duly received his communications. The fear of pins or matches is a common one. The writer knows of the case of a clergyman who has a

constant dread that he may have dropped a pin into a drinking cup, and that inadvertently he may be the cause of the death of some person who may swallow it. To administer the Holy Communion is always a source of great anxiety to him, through fear that he may drop a pin into the chalice. Some persons will take several hours to dress themselves every morning, as they have to search each article of attire for pins or matches before putting it on. Inquisitiveness is another form of obsession. In this case the patient feels compelled to pry into everything; if he sees a man reading a letter, he works gradually towards him until he can read it himself. An imperative idea such as this not uncommonly leads to altercations with strangers, who object to their private correspondence being made the object of prying curiosity. An extreme instance of this inquisitiveness was the case of a man who was seen running down the middle of the Strand after a hansom cab; he had seen a piece of paper which had become attached to the tyre and was revolving with the wheel, and he felt impelled to see whether there was anything upon it.

Doubt may become so prominent a factor in some people's lives that it must be considered as an obsession. In its mildest form doubt is nothing more than a slight feeling of uncertainty, and a desire for others to decide. Later it becomes a more active principle; motives and actions are weighed and weighed again, and yet the mental state remains one of indecision. If in the end a judgment is arrived at, it is no sooner acted upon than the feeling of doubt again asserts itself, and the expediency of the decision is questioned. Such persons will return over and over again, and ask whether they made themselves clear when they expressed a view on some subject. In some extreme cases this constant doubt with all its accompanying worry and distress so undermines the health of the patient that a serious mental break-down may result. It is impossible to recite every conceivable form of obsession, but the above-mentioned will be found to be the most common examples.

It is now necessary to refer briefly to the general effect that these imperative ideas have upon the patient. The obsessions that appear in the average person are not important, for they do not seriously affect his intellectual life. They

occur periodically, and for the time being may give rise to some slight annoyance, but the attention is easily directed to other things when occasion demands. On the other hand, if obsessions constantly recur, they tend to become more elaborate and organised, and in the course of time usurp the whole attention. The patient strives hard to put the idea out of his mind, but it recurs with greater force, and clustering round it, with ever-increasing numbers, are the vague fears and doubts.

The next state is one of mental anguish and a feeling of impotence at not being able to remove the cause. For a time the struggle may continue, but soon the agitation of mind sets up physical disturbances, and the restlessness may be intense. At last the patient obeys the dictate of his thought, whatever it may be. The action gives rise to a sense of mental calm, which is only ruffled by slight feelings of depression, brought about by the knowledge of the impotence of the will to overcome the obsession. For the moment the imperative idea is satisfied, but the mental peace is of short duration. Before long the imperious thought has again returned, and a renewed struggle begins. The knowledge of ultimate submission adds to the mental torment of the patient, who accordingly braces himself to resist to the utmost. Again he fails, and again the obsession is satisfied; the greater the effort that has been made to conquer, the greater is the sense of relief which follows the relinquishment of the contest.

Consciousness is clear throughout; the patient realises the whole position, and will freely tell his trouble to others; he admits the folly of the whole situation, and cannot understand why he is not able to cast aside his foolish thoughts. The emotional attitude varies in different cases, but there is usually some depression occasioned by the continual failure to overcome the obsession, and in some instances this depression may become so severe as to necessitate asylum treatment. Nevertheless in the great majority of cases imperative ideas do not result in insanity. The memory is usually excellent, but the powers of observation may be limited, as the whole attention may be occupied by the obsession. True hallucinations rarely appear, but expectancy may from time to time produce illusions, which the patient readily recognises as such. Attempts at self-destruction are very rare, but when the

imperative ideas are so distressing and continuous as to render the life of the patient a burden to himself, the danger of suicide must not be overlooked.

Physical Symptoms.—In the milder forms of this malady the general health of the patient does not suffer to any marked extent, but when the obsessions are constantly recurring the continual worry may seriously undermine the bodily strength. In that event the weight falls, and the various systems of the body become disordered.

Course.—The disease runs a very chronic course. Imperative ideas are always more marked when the general health is bad, and after physical improvement has taken place, they may almost disappear for a time or become so feeble as only slightly to affect the habits of the patient. Occasionally the annoyance is so great that rapid physical deterioration results, and with increasing bodily weakness the mental torment becomes more unbearable. Many patients remain in fair health, but are unable to follow their customary occupations, as the attention is constantly engaged with the obsession.

Prognosis.—The prognosis is not favourable in patients who have suffered from imperative ideas for many years, and unfortunately this is usually the case before a physician is consulted. If the history is a short one much relief can be gained from treatment.

Treatment.—In every case it is wise carefully to explain to the patient that obsessions are a most common complaint, and that the majority of persons suffer from them in a mild way. If the sufferer is seen in the early days of the complaint, warn him against being governed by habit. Many obsessions are based upon some habit, which cannot be displaced, the patient feeling that the habit is of such long standing that it would be tempting Providence to make any change. A timely warning will do much for such a man, as it may prevent him from nursing ideas, which, if encouraged, may become the ruling motives of his life. In those cases where the physical health is bad the patient should be kept in bed for a few weeks, and fed on a nourishing diet. The general bodily condition must always be attended to, for the better the health the better the powers of control and resistance.

Diversion and exercise in the open air will do more than the will power in dispersing the tormenting thoughts. Hypnosis has been tried in the treatment of imperative ideas, but the results are very disappointing. Some authorities claim to have had success, but others condemn it as useless. The writer is unable to recommend hypnotic suggestion, as the cases which he has known to have been treated by this method have derived little, if any, benefit from it.

CHAPTER XVIII

INSANITY AND PHYSICAL DISEASES

The relation of mind to body has already been briefly discussed in a former chapter. It has been observed that in all bodily disease there is some accompanying mental disturbance, some alteration in the mind of the individual. This mental aspect is frequently overlooked, even when it forms a prominent symptom in a case. Similarly, there is a physical side to all mental disease. These two groups of symptoms are present in every case, and it is for the physician to decide which is primary. This is of special importance when definite physical disease in association with insanity has to be treated. Further, it is necessary to consider the relationship of the one to the other—whether, for example, the mental disorder influences the course of the organic disease or *vice versâ*. Insanity, in relation to some of the more common forms of physical disease, will now be considered.

Phthisis and Insanity

The relationship of phthisis to insanity is very close. In one family will be found some insane and some phthisical members. A tubercular parent may beget children who later become insane. When the two diseases are associated in the same individual, it is necessary to consider which appeared first. Phthisis has been in the past, and is even at the present day, one of the commonest causes of death in our large asylums. The great majority of these patients develop phthisis in the institution—that is to say, the tubercular disease is secondary to the insanity. Occasionally it occurs that a man who has been phthisical for some time undergoes a gradual mental change until he becomes definitely insane.

Much discussion has taken place during recent years as to whether there is a special form of insanity that can be rightly

called 'phthisical insanity.' In examining this question, all those patients who develop tubercular disease after the appearance of mental disorder may be excluded. When insanity is consecutive to the lung disease the patient is usually depressed, with delusions of suspicion and ideas of poisoning; but this type of mental disorder is certainly not limited to phthisical persons, and is found in other forms of insanity. There is no special type of mental disorder which is either characteristic or pathognomonic of phthisis, but the insanity is frequently coloured by the special physical symptoms of the particular case.

Types of Mental Disease.—Apart from insanity, every physician has observed the peculiar mental attitude of the phthisical patient; he is full of hopefulness, however ill he be. It might therefore be expected that upon the appearance of definite mental disorder excitement or excessive buoyancy would be found. This is not the case. As already observed, mild depression with ideas of persecution and suspicion is the most common form of insanity. In other cases the depression is accompanied by ideas of unworthiness; occasionally profound restlessness and agitation are exhibited.

Mental Symptoms.—These patients are usually disagreeable, querulous, and quarrelsome. They are frequently mildly depressed and unable to occupy themselves. At times they are very abusive, and complain that poison is mixed with their food. Refusal of food is common, and œsophageal or nasal feeding may become necessary. The memory is fairly good, but the power of attention fails, and sustained concentration of thought becomes impossible.

Any delusions that may be present are usually the explanation developed in the patient's mind for his altered feelings and sensations. At times definite delusions of persecution develop, but with the advance of the disease in the lungs, these ideas usually become less marked. Ideas of filth may be a symptom, and when they are present the patient usually washes many times a day. A suicidal tendency is common. Hallucinations are found in about a third of the cases. When mental disorder supervenes the patient ceases to complain about any physical discomforts that he may

formerly have felt as a result of his phthisis. This has led to the belief that insanity is beneficial to phthisis, but this is not the fact. In reality the mental disorder merely masks the physical symptoms, which are usually progressive.

Physical Symptoms.—The physical symptoms are largely those found in ordinary cases of phthisis. The body weight falls, and the general nutrition is profoundly affected. Auscultation of the chest reveals consolidation or cavities. There is seldom any cough or pain. The sputum, if it can be obtained, shows the presence of tubercle bacilli. The temperature is usually raised towards evening. Insomnia may be a trying symptom.

Course.—In the majority of cases the course is a progressive one; mentally, the patient tends to become partially weak-minded, but it is of interest to note that, when the physical disease becomes extensive and life itself is threatened, there is not uncommonly a decided improvement in the mental condition of the patient. Hæmoptysis and severe diarrhœa may be the cause of fatal collapse. Sudden terminations are common in spite of every precaution, and fatal syncope may occur in a patient whose phthisis was not known to be very advanced.

Diagnosis.—The diagnosis of consecutive phthisis is by no means easy, and frequently the disease is very advanced before it is discovered. A rapid loss of body weight—especially if accompanied by intermittent fever—may connote the onset of tubercular disease. In the insane the difficulties of auscultation are very great; the chest may be examined thoroughly, and yet reveal little or no disease. When the mental disorder is secondary to the phthisis, the onset of the former is usually insidious. The patient becomes morose and irritable; he refuses to occupy himself, and may from time to time give expression to some delusion. Persistent refusal of food may be an early symptom.

Prognosis.—The prognosis depends largely upon the extent of the lung mischief. As a general rule the outlook is not hopeful. Most patients die, but there may be recovery from the insanity during the last few weeks of life.

Treatment.—When a physical disease is associated with a mental disorder, the treatment should be chiefly directed

towards the relief of the former. In the case of phthisical insanity plenty of fresh air with good living is indicated. Milk and eggs should be liberally given. If there is refusal of food, it is nearly always necessary to send the patient into some institution.

Diabetes and Insanity

Glycosuria is rarely found in the insane, but it is common in neurotic families. There is no special form of insanity that can be rightly called Diabetic Insanity. The usual history of the class of cases to which this term is sometimes applied is as follows: The patient has been suffering from sugar in the urine for some months, but more recently he has been slowly altering mentally. He has become extremely irritable and over-anxious; he is constantly complaining, and is inclined to misinterpret the physical symptoms of his diabetes. He is depressed, usually more markedly in the morning. There is a tendency to suicide, or an actual attempt at self-destruction may have been made. In more advanced cases there is a profound melancholia of the hypochondriacal type. Food is frequently refused. Not uncommonly when the patient becomes definitely insane the glycosuria disappears, but only to return when there is a remission in the mental symptoms. Sugar is found in the urine of a small percentage of general paralytics.

Prognosis.—The prognosis is fair in persons over forty-five years of age, but with younger patients the outlook is by no means good.

Treatment.—The treatment is chiefly directed to alleviate the diabetes. In those cases where there is extreme emaciation the physician should not hesitate to resort to forced feeding, and he may, for the time being, ignore the presence of sugar in the urine. A careful daily record should be kept of the amount of sugar passed, and the dietary should be largely regulated by these figures. It will be found that a liberal diet is not always followed by an increased percentage of sugar.

Influenza and Insanity

The toxic elements of influenza seem especially prone to affect the nervous system. Few persons pass through an attack of

influenza without showing some mental or nervous symptoms. The most common condition is one of mild depression ; there is a sense of indefinable misery, of unfitness for the slightest mental effort ; the patient feels unfit for work, and small annoyances irritate him. Some persons suffer from neuralgia and headaches for a few weeks after influenza, others become sleepless, and unless carefully treated this insomnia may terminate in a severe mental break-down. Neurasthenia may also follow influenza.

It is not always the severe forms of influenza which are followed by nervous symptoms ; profound mental disturbances are often seen in persons who have apparently had quite a mild attack of the disease. It is those persons with an unstable heritage who are especially liable to be affected. Actual mental disorder may appear during the febrile stage of the disease, in which case the insanity is commonly of the maniacal type. Post-influenzal insanity is more usual, and the mental disorder, which is usually of the melancholic variety, develops during the succeeding weeks or months after the illness. Occasionally influenza is the determining factor in the production of general paralysis, for the nervous system of the man has probably been slowly degenerating, and the influenzal poison seems to be the final agent.

Mental Symptoms.—The mental symptoms vary with the time of the onset of the insanity. If they appear during the febrile stage the symptoms are those of acute mania. The patient becomes noisy and restless, and hallucinations are common. The excitement may be very intense and may necessitate removal to an asylum. After a time the maniacal symptoms may abate, and the patient passes into a stuporose or depressed condition. Food may be refused at any stage, in which case resort must be had to forced feeding. If the mental disturbance is post-febrile in onset, it may develop within a few days or weeks from the cessation of the fever.

The onset is frequently very insidious ; the insanity may be slowly developing for weeks or months before it is even suspected by the relatives of the patient. Weeks of sleeplessness may gradually undermine the nervous energy of the patient. The body weight may steadily fall, and persistent anorexia may aggravate the condition. Work becomes a labour, the

attention fails, and indolence and apathy become marked. The morning hours usually bring a sense of misery, and suicidal feelings slowly assert themselves. If improvement does not take place the next stage is one of profound depression. Delusions and hallucinations may appear, and the condition becomes one of acute melancholia. Self-accusation and ideas of unworthiness are frequent in some persons; others become hypochondriacal. The physical symptoms are similar to those found in acute melancholia.

Prognosis.—The prognosis is good if treatment is undertaken in the early stages of the insanity. Some cases recover within a few months. Persistent auditory hallucinations frequently point to chronicity, and, when they are present, the physician should be careful not to give too favourable a prognosis.

Treatment.—As in most other diseases, the treatment resolves itself into two kinds: (a) *prophylactic*; (b) *curative*.

(a) *Prophylactic.*—Influenza, especially when it occurs in a neurotic subject, requires proper treatment. The diet should be liberal and consist of nourishing foods, such as milk and eggs. Patients will frequently complain that they have no appetite, and on this account will ask to be excused from eating what is placed before them. Such persons require very firm management. To give way to their wishes is to court disaster. The body weight should be recorded week by week; every few pounds lost means a stage nearer a nervous collapse, while increased body weight brings increased security. Insomnia should be treated not necessarily by drugs, but on the general lines elsewhere laid down. Rest from work is necessary, but the holiday should be wisely used and not spent in travelling or in other ways conducive to the production of physical exhaustion.

(b) *Curative.*—The curative treatment of insanity following or associated with influenza, is similar to that already described under mania and melancholia. In the post-febrile insanities it is often difficult to decide when the limits of sanity have been crossed; it is probably owing to this difficulty that so many persons succeed in committing suicide before being placed under care. The danger of suicide is a very real one, and the physician must always be on the watch.

Chorea and Insanity

There is no form of mental disorder that can properly be called Choreic Insanity. Every patient suffering from chorea usually exhibits some symptoms of mental disturbance. Many of these patients are dull and listless, with general apathy and loss of memory; but as the mental symptoms are so slight in comparison with the physical, they are commonly overlooked. More rarely the mental disorder is very severe and calls for immediate treatment. Sir William Gowers has shown that chorea is more likely to occur in neurotic families than in the more stable ones. The insanity may be consecutive to the chorea, or *vice versâ*.

Ætiology.—Mental complications during an attack of chorea are more commonly seen in adults than in children, and they usually occur in very unstable persons. Women who develop chorea during pregnancy seem especially liable to mental disorder during the attack, but it must be borne in mind that chorea seldom occurs in the adult as a first attack, usually the patient has suffered from a previous attack in childhood.

Mental Symptoms.—In consecutive mental disorder the insanity may be one of several types. (*a*) Choreic mania rarely begins before the end of the first week of the outbreak of the chorea, and seldom occurs after the fourth week. At times it is very difficult to say when the limits of sanity have been passed, as the impulsiveness and loss of control grow gradually out of the restless agitation so commonly seen in patients with chorea. Sleep becomes very broken until the condition is one of complete insomnia. Consciousness becomes clouded, and the patient may fail to attend to the calls of nature. Hallucinations of sight and hearing may be present.

(*b*) The mental state may be one of depression, with the belief that recovery is impossible. This is more commonly met with in pregnant women.

(*c*) Acute delirium of a very severe type may develop. This form differs from the ordinary choreic mania chiefly in the severity of both the mental and somatic symptoms. This insanity closely resembles acute delirious mania. The follow-

ing symptoms are usually present: fever, hallucinations of sight, restlessness, excitement, extreme insomnia, and refusal of food. The chief danger lies in prostration and exhaustion, which may terminate fatally.

(*d*) The general confusion and mental hebetude so commonly seen in choreic patients may become more profound, until the condition becomes one of stupor with defects in memory.

(*e*) Delusions of persecution may develop in cases of chronic chorea.

(*f*) It has been noticed that consecutive chorea, i.e. chorea appearing in a patient who is insane, is nearly always chronic.

(*g*) Huntington's Chorea (hereditary progressive chorea) was described by Huntington in 1872. The chief characteristics of this disease are that it (1) is hereditary, occurring in certain families throughout several generations; (2) is a disease of middle life, usually between the ages of thirty and forty-five; (3) affects both sexes equally, and may be transmitted by either males or females; (4) is a progressive and incurable condition; (5) is a disease which is accompanied by mental deterioration, steadily tending towards dementia. The chronic twitchings at first appear in the face and upper limbs, and gradually extend to all the voluntary muscles of the body. The movements at first are, to a certain extent, under control, and in this way differ from those of ordinary chorea; for example, a patient can easily put a button through a button-hole or perform other exact movements. Usually in time the movements become more extensive and less controllable. The twitchings cease during sleep. The heart is normal, and sensation is unaffected. The gait is characteristic, the patient sways from side to side, and moves in a spasmodic way. The early mental changes are those of general apathy and indifference. There may be a period of great depression, which is at times broken by outbursts of irritability and excitement. Sooner or later, the mental state passes into that of dementia, which may become profound. This disease does not tend to shorten life.

Physical Symptoms.—The general health usually suffers severely in all those forms of chorea where there are consecutive mental complications. Huntington's chorea is an exception. In the acute delirious forms and more serious types

of choreic mania the physical health is markedly affected, and there are disturbances of the functions of all organs. Nutrition fails, and there is a general wasting of tissue. Refusal of food, which is a common symptom, increases the difficulty of maintaining the patient's strength.

Course.—The course is a fairly rapid one in all cases in which acute mental disorder supervenes on an attack of chorea, and the patient either dies or shows signs of improvement within a few weeks. In a small percentage of cases the improvement does not continue, and chronic mental disorder results. This termination is more common in the delusional and stuporose types.

Prognosis.—The prognosis is usually good in the maniacal and depressed forms of mental disorder, which are associated with chorea. With acute delirium the condition is more serious, and the prognosis in the first instance should be of a guarded nature. Still, when the patient begins to improve there is seldom a relapse. Huntington's chorea is progressive and incurable.

Pathology and Morbid Anatomy.—The pathology of these conditions is very obscure, but the view held by Sir William Gowers that the disease originates in the motor cells of the cortex has much evidence in its favour. Many authorities believe that the change is due to a toxin. In persons dying from choreic insanity there is usually found at post-mortem a very marked hyperæmia of the brain. In the chronic forms of chorea there is a progressive degenerative change to be observed in the cells of the motor cortex.

Treatment.—The treatment is largely symptomatic. Food should be liberal and of a nourishing nature, and consist chiefly of milk, eggs, and custards. The more acute the attack, the greater must be the amount of food given. Forced feeding should not be long deferred in the event of refusal of food. Stimulants may be necessary in severe cases. Any tendency to constipation should be corrected: it is wise to keep the bowels freely open. Sedatives must be given if sleep is not obtained naturally, the form of hypnotic used largely depending upon the age and general condition of the patient. Chloral hydrate is the best to use, when it can be safely employed. If the patient is very restless or inclined to

be violent, he should be placed upon a mattress on the floor and surrounded by other mattresses in order to prevent bruising.

Insanity of Myxœdema

All persons suffering from myxœdema exhibit some mental change, but it varies in degree in different cases. In some the intellectual disturbance becomes so great that it calls for special treatment, while in others it is barely noticeable. It is, however, always necessary to remember that there is a mental aspect to this illness ; otherwise the prominence of the physical symptoms may be allowed to obscure the mental, with the result that some unforeseen accident takes place, which greater circumspection might have avoided.

Ætiology.—This disease is brought about by the failure of the thyroid gland to perform its normal function. It usually appears between the ages of thirty and fifty-five, and is more common in women than in men.

Mental Symptoms.—The early stage of myxœdema is usually marked by a steady deterioration in the intellectual powers of the patient. Mentation is deliberate, and there is failure of general apprehension. Movements and thoughts are slower. The memory is defective for recent events. The patient may have outbursts of irritability. Work which was formerly performed with ease becomes increasingly difficult ; mistakes are frequently made, and the daily task is indifferently discharged. Speech is slow and the voice monotonous, and there is inability to grasp written or spoken words. These patients are usually fully aware of their slowness in thought and action, and frequently complain about it, in fact many of them are acutely conscious of and depressed by the failure of their intellectual powers.

If the patient remains untreated, the general lethargy increases, and there is marked drowsiness. He becomes too lazy to wash or dress himself. Movements become more and more sluggish, and are made in a clumsy fashion. The patient readily fatigues ; he is indifferent to his surroundings, and he pays no heed to the wants of others. The emotional aspect varies, but the majority of these patients are mildly depressed with vague ill-defined fears. The early irritability may develop into acute excitement. In advanced cases there

may be both delusions and hallucinations, and at times there is marked exaltation. These patients are rarely, if ever, suicidal or homicidal.

Physical Symptoms.—The physical symptoms of myxœdema are fully described in text-books on medicine, but for the convenience of the student the more important ones will be briefly referred to here. The skin of the face becomes swollen and waxy in appearance. The œdema is elastic, but does not pit on pressure nor alter by gravitation. The eyelids, nose, and lips are all thickened. The skin throughout the body is similarly affected, and it is rough and dry to the touch. Perspiration is defective or entirely absent. The hair and nails are brittle and readily split; the former comes out, often leaving the patient quite bald. The teeth decay. The hands become broad and 'spade-like,' and fine movements of the fingers are impossible. The mucous membranes are also involved, and the tongue is large and thickened. Areas of exceptional thickness may be found in the axillæ and supra-clavicular regions, and the abdomen may be large and pendulous. The temperature of the body is usually sub-normal; some patients complain of constant chilliness, and readily notice all thermal changes. The pulse frequency is slower than normal. Anæmia is well marked when the disease is advanced, and there is a tendency to hæmorrhages from the mucous surfaces. The bowels are usually constipated; and there is amenorrhœa in the female.

Prognosis.—If left untreated the course is towards mental and physical deterioration, but the progress may be slow and even broken by periods of apparent return to health. Ultimately death results from coma or more commonly some intercurrent disease. When placed under treatment a general improvement is quickly observed both in the nutrition of the body and the mental processes. If the treatment has been started comparatively early in the course of the disease, complete recovery may be expected; but where the illness has extended over a considerable period of time, the damage to the nervous system may be too serious to repair. These patients recover up to a certain point, but they never regain such full enjoyment of health as to render them capable of performing any arduous duties.

Diagnosis.—The diagnosis ought not to be difficult. The disease used to be confounded with chronic Bright's disease, but there are many points of distinction. The greatest danger of overlooking the true diagnosis is when marked mental symptoms have developed, especially if these are acute. It is a common error to merely diagnose insanity, and never attempt to discover the cause of the mental disturbance. Therefore it is in a disorder such as myxœdematous insanity that the thorough physician succeeds, where his less observant brother has failed.

Pathology and Morbid Anatomy.—The thyroid gland is atrophied or diseased. In the early stages there is a small-celled infiltration of the walls of the vesicles, and later the gland is converted into fibrous tissue, throughout which are scattered collections of epithelial cells and colloid masses which are the remnants of the former vesicles. The changes in the skin are due to a hyperplasia of the connective tissue. In the brain the neuroglia may be found to be greatly increased, and there is frequently a marked overgrowth of the connective tissue round the vessels. Some observers have noted a tumefaction of the nerve-cells.

Treatment.—It is wise to begin with small doses of thyroid, and gradually increase if found necessary. This method has a dual advantage in that—(1) the smaller doses may be sufficient to promote recovery; (2) it is with the larger doses that untoward results are apt to occur. Three to five minims of liquor thyroidei (B.P.), or three grains of thyroideum siccum (B.P.), should be given once a day. At first it is better to keep the patient in bed. Morning and evening temperatures and the frequency of the pulse should be recorded. If improvement does not take place within a few days, the dose should be gradually increased. At no time should the drug be pressed with the idea of getting the patient better as rapidly as possible; such a course is fraught with no small risk. The following symptoms indicate that the dose must be reduced: persistent frontal headache, dizziness, irregular cardiac action, diarrhœa, urticaria, fever, emaciation, trembling, &c. If everything is satisfactory, improvement, both mental and physical, quickly takes place. The general appearance of the patient alters, and mentation becomes more active and the

memory returns. Many recover within three months, but patients must be made to understand that it will be necessary to continue taking extract of thyroid gland during the remainder of life. The dose can usually be limited to small dimensions; each patient varies in this respect, and the proper amount necessary to keep him in health can only be discovered by careful observation.

Cretinism

Ætiology.—Cretinism occurs in certain well-defined areas and is closely connected with goitre. It is met with chiefly in valleys; and in certain districts most of the children, including those of perfectly healthy parents, become cretins. Dr. Ireland, in his book on 'The Mental Affections of Children,' writes: 'It would appear that the cause which produces goitre alone when it is feeble, produces cretinism when it acts with greater intensity.' Domestic animals are affected with goitre. If children are moved into the higher districts they do not develop cretinism. Evidence tends to indicate that the disease is produced by the drinking water, but careful search has failed to elicit what the exact deleterious material or poison actually is. As above indicated, cretinism is usually endemic, but sporadic cases occur from time to time, either as the result of congenital absence of the thyroid gland or from atrophy or other changes in this organ.

Physical Symptoms.—As a general rule cretinism is not recognised until the child is about two or three years of age, but a certain number of cases show symptoms at birth. In infancy the condition can be recognised by the eyelids appearing heavy and swollen; the skin is of a yellow colour and the tongue is large and flabby. But it is during the subsequent years that the disease becomes more recognisable. These children do not grow like other children, and remain squat and diminutive, and some are dwarfs. The head is flattened at the top, and the fontanelles may be widely opened. The forehead is low and narrow. The nose is flattened. The eyelids have a solid transparent appearance and look œdematous, but there is no pitting on pressure; a similar condition is to be observed about the hands and feet and various other parts of the body. The thickening about

the neck is very noticeable, and frequently a firm swelling can be seen and felt on either side of the neck. The thyroid gland as a rule cannot be felt. The lips are thick and the tongue swollen. Dentition is late and the teeth are badly formed. Salivation is common. The limbs are large but very feeble. Walking is not acquired until the child is three or four years of age, and in some cases later than this. The gait is slow and clumsy. The skin is coarse and thick, and devoid of perspiration. Speech is very late in developing, and is usually confined to a few badly pronounced words ; the voice is harsh. The abdomen is large and distended. The sexual organs develop late and imperfectly or remain in a rudimentary state. Some of these children are deaf and others blind, but the majority of them have good sight.

Mental Characteristics.— The mental symptoms vary from mild confusion and general apathy to a condition of profound idiocy. The child fails to develop intellectually, and is stupid and dull. Thought is slow, and there is inability to acquire knowledge. The Sardinian Commission divided cretins into three classes, according to the degree of their mental capacity :

(*a*) The first class consisted of those entirely devoid of any intellectual faculty, without power of speech or reproduction. These were named simply *cretins*.

(*b*) In the second class were placed those whose intellectual capacity was confined to satisfying their bodily wants, who could speak in a rudimentary language, and who could reproduce. These were named *semi-cretins*.

(*c*) In the third class were comprised those who possessed all the faculties of those in the second class, but had greater intellectual powers, and who with careful training could acquire the knowledge of a trade. These were named *crétineux* or *cretinous*.

Course.—The course of the disease if untreated is a progressive one, and the child becomes more and more weak-minded. Rickets is a common complication, and in a certain proportion of cases severe convulsive seizures develop. Death is generally due to some intercurrent condition, such as bronchitis, convulsions, or diarrhœa. Phthisis is in rare cases associated with cretinism.

Prognosis.—The prognosis is not so good as might be

expected from the possibility of moving the child from the district in which the disease is rife to more healthy surroundings, and from the advantages of treatment with thyroid gland. When the disease is confirmed, the mental powers tend to fail.

Pathology and Morbid Anatomy.—The morbid anatomy is by no means certain, and the changes found in the brain are very varied. The bones of the skull are sometimes abnormally thick, but occasionally thinned; Wormian bones between the sutures are common. Virchow believed that a characteristic of the skull of the cretin was premature ossification of the spheno-basilar bone, serving to prevent the elongation of the base of the skull, and so to limit the development of the brain. Lombroso and other observers agree with Virchow that the distance from the root of the nose to the occipital foramen is shortened in cretins, but find that there are many cases which do not show an early ossification of the spheno-basilar suture. The brain is usually asymmetrical. The convolutions are unusually simple in arrangement. In some instances there is dilatation of the ventricles, and the brain is atrophied. In the majority of cases of cretinism there is some disease of the thyroid gland.

Treatment.—The treatment has been divided into the prophylactic and curative methods. Dr. Baillarger suggests the following important points in dealing with the endemic type of the disease: (*a*) to combat the general causes of insalubrity, to improve the hygienic conditions, and increase the well-being of the population exposed; (*b*) to change the drinking water; (*c*) to institute everywhere a gratuitous course of treatment, which should at once begin upon the appearance of goitre or cretinism. When possible the children should be moved from the valleys into the mountainous districts. The diet should consist largely of good milk. The children should be carefully clothed, as they feel the slightest changes of temperature. According to recent observations it has been found that the early administration of thyroid is sometimes very useful in preventing the progress of the disease, but it is rare to get much mental improvement. Iodide of potassium given in small doses is sometimes followed by good results.

Gout and Insanity

There are nearly always some mental changes during or preceding an attack of gout. These alterations may be slight or severe, and consist of the following: morning depression, great irritability, failure of attention and of power of application, and at times sensory and motor disturbances. An attack of gout may be accompanied by sleeplessness, a symptom which usually aggravates the condition. Gout and insanity may alternate. A man suffering from acute podagra may suddenly develop insanity, and when this takes place the gout usually disappears, but only to return when the mental disturbance is past. Before this alternation was recognised, medical men were blamed for 'driving the gout in' by the treatment adopted. It is now known that this metastasis may take place apart from any active treatment. Any disease which alters the blood and so affects the nutrition of the brain may tend to produce insanity. In gout the blood is vitiated, and this must lead to changes in the various nervous centres.

Mental Symptoms.—The mental symptoms are usually those common to melancholia. Suicidal feelings are often prominent. Auditory and visual hallucinations may develop. There is great insomnia, and the patient may be very restless. At times an outbreak of acute excitement may occur, and even acute delirious mania has been recorded in association with gout. Hypochondriacal states may occasionally be seen, and they are especially connected with the cases of so-called 'suppressed gout.' It is not exactly clear what this term 'suppressed gout' means; it is generally understood as connoting a malady in which the patient has no arthritic disorders, but in other ways shows himself to be a gouty subject.

Physical Symptoms.—When an attack of insanity supervenes, the joint troubles frequently disappear, and the physical symptoms are those common to melancholia. As the patient recovers, one or more joints may become inflamed, but with rest and care they soon get well.

Diagnosis.—In many cases reliance has to be placed to a great extent upon the history given by the patient or his

friends, and the presence of such symptoms as tophi in the ears. Where the joints are still affected, the diagnosis is easy. An examination of the blood may also assist.

Prognosis.—The prognosis in the majority of cases is distinctly good, and many patients recover within a few months. The outlook is bad in patients suffering from acute delirious mania.

Treatment.—The treatment may be prophylactic or curative. The former consists of regulating the patient's mode of living both as regards diet and exercise. Care should be exercised against using powerful drugs too freely; they sometimes aggravate rather than alleviate the condition. The curative treatment is directed towards improving the state of the blood, and in this way the general nutritional condition of the body. The bowels require careful attention. The writer has found the use of saline purges very valuable. Hot air and other baths are very beneficial in some cases. If the patient is suicidal, he must be kept constantly under supervision, and asylum treatment may be necessary.

Rheumatic Fever and Insanity

Rheumatic fever in common with many other diseases seems to be in some way closely connected with mental disorder. It may alternate with insanity in the same way that gout, diabetes, and other maladies frequently do. At the time when large doses of iron were given in the treatment of rheumatic fever, if insanity supervened the medicine was not infrequently blamed for producing the mental disorder. But the same thing has happened when soda salicylate has been employed, and clearly it is not the drug but some peculiarity in the disease which leads to changes in the nerve-cells of the brain. Apart from actual insanity, it has been noticed that after an attack of rheumatic fever the patient is altered morally or intellectually. On this subject Savage writes:[1] 'We have met with several patients, mostly women, who have ceased to perform their domestic duties, and have caused family discord in consequence of their changed habits, the industrious mother becoming indolent and negligent of her duties. It is certain, too, that some persons who before

[1] 'Rheumatic Fever and Insanity,' Tuke's *Dict. of Psychological Medicine.*

rheumatic fever were sober and truthful, after it become intemperate and untruthful.'

The mental disorder may appear either during the febrile stage of the disease or during convalescence. The delirium of the fever may pass on to acute mania, or mental disturbances may gradually develop towards the end of the illness. In this latter case the insanity may take the form of mania or melancholia, but excitement is more common. If the heart becomes implicated, the mental disorder to some extent varies according to the valves which are affected. Mania is more common with aortic disease, and melancholia with mitral disease.

Prognosis.—The prognosis is good, and most cases recover, but there is a danger of recurrence with any subsequent attack of rheumatic fever.

Treatment.—The treatment is on general lines, but the possibility of the presence of cardiac disease must not be forgotten, especially if the patient is very resistive or requires forced feeding.

Heart Disease and Insanity

There is no definite relationship between heart disease and insanity; but in that the brain is dependent upon the heart for receiving a regular and proper supply of blood for its nourishment, it will be easily understood that valvular obstruction or incompetence may be a factor in the production of mental disorder. Anxiety and restlessness are common symptoms in aortic insufficiency, and other mild forms of mental aberration may be observed in patients with cardiac disease. Sleeplessness is another distressing symptom in some cases of heart disease, and is one that is prone to lead to insanity in neurotic subjects. Persons with aortic incompetence, who develop mental disorder, usually suffer from acute mania or so-called agitated melancholia, while those with early mitral disease are, as a rule, depressed. This is what we should expect to find, as the former have a low blood-pressure, and the latter a high one.

Sunstroke and Insanity

Sunstroke is often given by the friends of a patient as the cause of his mental break-down, but whether in reality it is

an important factor in the production of insanity is open to doubt. Clinical experience does not support such a view. Great heat or exposure to a burning sun may be the determining stress which brings on a convulsive seizure in one whose brain is degenerating from early dementia paralytica, but to say that sunstroke was the cause of his ultimately exhibiting symptoms of general paralysis is not true. Again, a man on the verge of syphilitic insanity may be overcome by heat on a summer day, or even have a 'seizure,' but in this case the effect of the sun has only been to exaggerate an already existing disease. Indirectly sunstroke may conduce to mental disorder, in that the patient may develop delirium, and this condition may pass on to acute mania.

Malaria and Insanity

Mental disorder may arise in connection with malaria in the same way as it does in other fevers due to specific toxins. During the febrile stage there may be acute delirium with sleeplessness, and this may develop into a more permanent form of insanity. In other cases the mental disorder may be intermittent, and apparently replace the febrile stage. This is said to occur most commonly with the quartan variety, and rarely with the tertian and quotidian. The condition is one of intense excitement accompanied by hallucinations, chiefly of the auditory and visual types. Upon treatment with quinine recovery usually takes place. Some patients after an attack of malaria suffer a great deal from neuralgia and insomnia, and marked symptoms of mental disorder may subsequently develop.

Syphilis and Insanity

The study of the relationship of syphilis to mental disease is a very important one to the State, and of intense interest to the physician. If it can be proved that syphilis is a weighty factor in the production of insanity, it is incumbent upon the medical profession to continue a thorough and careful research, so as to learn in what ways it is possible to prevent the dissemination of the disease, and how to counteract the ill effects of the poison in persons who have become affected.

Various authorities express widely different views as to the

part syphilis plays in producing mental disorder. We live in an age in which there is a tendency to place syphilis in the very foreground of ætiological factors which are believed to be possessed of great potency in the generation of disease. When any disease is obscure in its origin, syphilis will almost certainly be suggested as the source of the malady. Do we read that in former times mental disorder was peculiarly rife in seaport and other large towns, where syphilis in a virulent form was known to be prevalent and never properly treated? May it not be that the tendency of the present day is to collect all the evidence which goes to support our case, while neglecting the evidence which is against us? The author is disposed to think that if ten thousand syphilitic persons were taken, and ten thousand others non-syphilitic but leading the same kind of life as the former, the percentages of insanity in the two series would not differ greatly, if at all. Even when a man has had syphilis and subsequently becomes insane, it by no means follows that the insanity is related to or caused by the syphilis. By all means let us note carefully that a patient has suffered from syphilis, in the same way that we note that he has had scarlet fever or whooping cough; but this is very different from regarding syphilis as the cause of the illness.

True syphilitic disease of the nervous system has very characteristic symptoms, and unless these are present there is no proof that the malady in question is of syphilitic origin. There are, however, cases of insanity in which there is little or no doubt as to the true origin of the disease being syphilitic, or at least in which the relationship between the two conditions is more than an accidental one. Constitutional syphilis may give rise to a cachectic condition by the direct action of the poison on the blood, or it may lead to arterial disease, or it may produce local or diffuse disease of the brain and its coverings, or scattered gummata. There are not sufficient data to prove that mild attacks of syphilis are more apt to be followed by nervous disorders, and there is much evidence to the contrary. Syphilis, like many other diseases, does not affect all persons in a similar way; in one man it is the viscera which suffer most, and in another the vascular or nervous system. Unstable persons with a neurotic inheritance,

who have contracted syphilis, do not seem especially liable to suffer from specific disease of the nervous system, and experience seems to point in the opposite direction.

Savage[1] has drawn up the following scheme of the relationship between syphilis and insanity:

(*a*) Insane dread of syphilis.

(*b*) Insane dread of results of syphilis.

(*c*) Syphilitic fever, delirium, and mania.

(*d*) Acute syphilis, leading to mental decay.

(*e*) Syphilitic cachexia and dyscrasia, and mental disorder.

(*f*) Syphilitic neuritis (optic), suspicion, mania.

(*g*) Syphilitic ulceration, disfigurement, and morbid self-consciousness.

(*h*) Congenital syphilis, cranial, sensory, and nerve-tissue defects.

(*i*) Congenital syphilis, epilepsy, idiocy.

(*k*) Infantile syphilis acquired.

(*l*) Constitutional syphilis: (1) vascular or fibrous; (2) epilepsy; (3) hemiplegia; (4) local palsies; (5) general paralysis, spinal (spastic and tabetic), peripheral.

(*m*) Locomotor ataxy: (1) with insane crises; (2) with insane interpretation of the ordinary symptoms.

The first class comprises those who are suffering from a morbid fear of syphilis; this is in reality an obsession, and the term 'syphilophobia' has been used to denote it. The patient is always washing and is scrupulously clean in all he does, and cleanses the various utensils out of which he eats his food. This dread may lead to marked depression, and to hallucinations of the various senses. These persons misinterpret any spots or marks about their bodies into symptoms of syphilitic disease. They may become intensely suicidal, and usually require careful watching.

The second class of patients are in many ways similar to the true syphilophobic cases in their conduct, as they are most particular in cleansing everything they use. They are more likely to be suicidal, and this symptom should be carefully watched. A man may believe that he has given

[1] 'Syphilis and Insanity,' Tuke's *Psychological Dictionary*.

syphilis to his wife and child, and acute remorse and depression may result. To send such a man travelling is dangerous in the extreme, and usually ends in disaster. It is far wiser to treat him as an acute melancholiac and potential suicide. Syphilitic fever has been known to be followed by an attack of acute mania. Probably the patient has been worrying about his illness and sleeping badly; and when the secondary symptoms appear he becomes feverish, and later delirious, and this temporary excitement is followed by more lasting mania. The condition is a very curable one, and the insanity rarely lasts more than two or three months.

Syphilis may have a serious effect on the general health of the patient. Now, it must be borne in mind that anything which seriously interferes with the nutrition of the body tends to produce mental disorder. This is noticeably the case in predisposed and neurotic subjects. The careless administration of mercury seems to assist in undermining the physical health and in producing a cachectic condition, which ultimately leads to trophic changes in the brain, and subsequent insanity. The symptoms may be those of a rapid dementia, or the condition rather that of sub-acute melancholia or acute mania. When syphilis attacks the face or some other exposed surface, the patient may become hypersensitive to the gaze of those about him. He may believe that everyone notices that he has syphilis, and may suspect that they shun him or talk about him. In time he may slowly weave a definite scheme of persecution, and pass into a chronic delusional state.

Congenital syphilis may lead to defects in the nervous system, which may result in failure of the development of the mental faculties, or convulsive seizures and subsequent interferences with mental evolution, or it may cause blindness or deafness, and thus deprived of one or more special senses, the child may remain feeble-minded. This question is again dealt with in the chapter on Idiocy and Imbecility. Constitutional syphilis is specially prone to attack the blood-vessels and the connective tissue of the nervous system. The nerve-cells and their processes are affected in a secondary way by pressure, which at first leads to alteration of functions, and later to atrophy and degeneration.

Brain-syphilis is not a common affection, and is not infrequently determined by a head-injury, or some severe mental or physical stress occurring in a man who has had an attack of syphilis some years previously. True cerebral syphilis usually develops within ten years of infection, and rarely after fifteen years. It has recently been observed by several authorities that the period of greatest danger for the development of brain-syphilis is during the first three or four years after infection, and that the risk decreases with each additional year.

Authorities have endeavoured to divide the cases into two classes: (*a*) those in which the cerebral blood-vessels were first affected—by the slow occlusion of these, trophic changes in the important nerve-structures result; (*b*) those in which neuroglia, membranes, or bones were the sites of the primary mischief. Mott[1] writes: 'It is usual to consider syphilitic disease under the following headings: Basic meningitis, meningitis of the convexity, cerebro-spinal meningitis, arteritis and neo-plastic formations (gummata), encephalitis. One finds usually all these conditions in the severe and early forms of the disease. At least that is my experience, as shown by the recorded cases in which autopsies were performed.'

The first symptoms may be mental or physical, but it is in the former event that the difficulty in diagnosis usually arises. The patient may exhibit progressive intellectual and moral degeneration, the memory fails, and all capacity for work disappears. An attack of excitement may supervene, during which the patient exhibits general exaltation, as shown by his extravagant actions and grandiose ideas. Hallucinations may be present, the auditory variety being the most common. Irritability is usually a prominent and early symptom. Some of these patients rapidly become stuporose and confused, with steady progression towards dementia; others develop delusions of persecution.

The physical symptoms may be obscure at first, but later become very definite. Severe headache, which is usually more marked at night, and cranial nerve palsies, are very suggestive of syphilis. Convulsive or apoplectic seizures may occur, and transient or more permanent paralysis may

[1] *Archives of Neurology*, vol. i.

result. The speech is thick and indistinct, but not always tremulous. The pupils may be affected, but a reflex iridoplegia is the exception rather than the rule. The discs may show optic neuritis as a result of intra-cranial pressure, or there may be a primary optic atrophy. A large number of these patients suffer from incontinence of urine, but this is probably in a large measure due to their mental state.

Diagnosis.—The diagnosis is largely dependent on the past history of the patient or the marks of former syphilis. Scattered lesions are very significant, especially if they clear up under antisyphilitic treatment. Very great difficulty may be encountered in differentiating between general paralysis and true cerebral syphilis, and no doubt the two diseases are frequently confounded. Brain-syphilis may be very intermittent, the patient rapidly progressing towards recovery and then relapsing, and later again improving. The speech-defects are different, and the pupillary changes less marked, but there is greater liability to cranial nerve palsies.

Prognosis.—The prognosis varies according to whether the mental change is functional or produced by organic disease. Those patients who suffer from morbid dreads or hypersensitive ideas usually recover if the treatment is started early enough. When the insanity is the product of disease in the brain and its coverings, or in the cerebral blood-vessels, the outlook is by no means favourable. About one-fourth of these cases recover, but there is a liability to relapse at some subsequent date. The most hopeful cases are those which present signs of local gummata, whereas in those which are a result of a slow vascular change the prognosis is decidedly bad. In all cases early treatment will give the best results.

Pathology and Morbid Anatomy.—Mott[1] states that syphilis may operate in two ways as a factor in the production of insanity. 'Firstly, the poison may produce a specific inflammatory process affecting the membranes and blood-vessels of the central nervous system, either of which may be affected separately or together. The process may be local or general. The inflammatory process may produce direct irritation or destruction of the nervous elements, the blood-

[1] 'Relation of Syphilis to Organic Brain Disease,' *Archives of Neurology*, 1899, vol. i.

vessels may be partly or completely occluded, and the effects on functions will depend on the extent of the process. The inflammatory process may also give rise to neoplastic growths, which may undergo regressive metamorphosis in the older parts (gummata), but all the processes are pathologically identical, and it may be observed that there is really no absolute specific character about them, yet experience has taught us that the lesions are pathognomonic of syphilis. Secondly, syphilis, whether acquired or inherited, may lower the specific vital energy of the component cells of the body as a whole, or the cells of particular tissues or organs.'

Ford Robertson[1] writes: 'In the insanity of tertiary syphilis the functional disturbance in the cortical nerve-cells is chiefly secondary to narrowing and occlusion of cerebral arteries by endarteritis obliterans, and to the mechanical and other effects of gummatous and meningitic lesions.' In the brains of three cases of syphilitic insanity which this observer examined, he found 'slight but distinct infiltration of the adventitia of the arterioles with round cells; that is to say, an acute periarteritis similar to that found in advanced paralysis. In each case there was also to be observed, scattered throughout the cortex, a few hyaline capillaries presenting the same features as the thickened capillaries so characteristic of general paralysis. The neuroglia changes were slight, consisting in a moderate degree of hyperplasia in the first layer in all three cases, and of similar conditions in the white matter of one. . . . It is further to be remarked that in some cases of vascular syphilitic insanity the inflammatory change in the intima is exceedingly acute, and the new formation of tissue very rapid. In others this morbid process is comparatively very slow. In most cases of general paralysis it may be observed that there is a slight new formation of tissue in the intima of the large cerebral arteries and pial and intra-cerebral arterioles. The cerebral vascular lesions in these two diseases would therefore appear to form a continuous series. On these and other grounds I am strongly inclined to believe that the vascular forms of syphilitic insanity and general paralysis of syphilitic origin are pathologically very closely related to each other, and that they blend

[1] *Pathology of Mental Disease.*

at their confines. Both are determined by a toxic condition, which develops as a result of previous syphilitic infection; the differences in the site and intensity of the vascular changes may depend upon certain special characters of the toxæmia, or merely upon the individual reaction.'

The vessels which are most commonly affected by a cellular proliferation of the endarterium are the vessels belonging to the circle of Willis, the arteries of the sylvian fossa, and the lenticulo-striate arterioles. In some cases the dura mater and pia-arachnoid are much thickened, and the latter is adherent to the convolutions. The gyri are at times atrophied, and the lining membranes of the ventricles are granular. The spinal cord and its arteries may also show syphilitic changes, and gummata or cicatrices may be observed in the liver and other organs. Congenital syphilitic disease of the brain may result from specific endarteritis, or chronic meningitis, or it may be primary and independent of these conditions. According to Barlow and Bury, the most common brain-lesion met with in hereditary syphilis is a cortical sclerosis which, microscopically examined, shows atrophy of cells and overgrowth of neuroglia tissue.

Treatment.—The treatment should be started as soon as possible. Some physicians prefer to give iodide of potassium alone; others give it in conjunction with mercury. The iodide can usually be pressed with advantage, as most patients will have less discomfort from the larger doses than when the smaller are administered. It is wise to begin with a dose of twenty grains three times a day, and increase steadily until each draught contains fifty or sixty grains. Some observers state that the iodide of sodium is more valuable than the potassium salt when the vascular system is the part most affected, as potassium iodide has a tendency to increase arterial tension. The mercury is usually applied in the form of ointment to different parts of the body or limbs. At times it is better to give the iodide and mercury alternately, first a course of one for a month, and followed by a few weeks' administration of the other. If the headache is very severe, the patient's head should be shaved, and mercurial ointment rubbed into the scalp.

The general health should be carefully attended to; the

teeth must be cleansed after each meal, and a mouth wash of chlorate of potash used. The patient must be kept warm, and all food-stuffs which are likely to produce a free action of the bowels should be avoided. There is no objection to the bowels being open twice daily. The patient must be kept under stringent treatment for several months, and must be told that it is absolutely necessary for him to live in the future a strictly sober and regulated life: quiet work and liberal holidays, no alcohol, and no excesses of any kind. Further, it will be wise for him each year to have a course of anti-syphilitic treatment.

CHAPTER XIX

DEFECTIVE MENTAL DEVELOPMENT: IDIOCY AND IMBECILITY; MORAL INSANITY

Idiocy and Imbecility

Most of the forms of mental disorder which have been considered in former chapters have been caused by a process of dissolution. The mental capacity of the individual has slowly degenerated; and step by step attributes which have been acquired in early life have become lost, or have been held in abeyance for the time being. The conditions are very different with idiocy and imbecility, for here there is failure of evolution, and defect in mental development. Some children are without even the rudiments of mind. They possess bodily organs which perform their functions more or less satisfactorily, but in point of mental power they are little higher than the brute creation; for they see yet do not perceive, they hear yet do not understand.

Idiocy and imbecility are almost synonymous terms, for they differ only in denoting the degree of mental enfeeblement. The idiot is marked by a greater degree of weak-mindedness than the imbecile, and is incapable of learning; the imbecile can be made to understand, and can receive rudimentary education. There is another class of the mentally deficient usually spoken of as the 'feeble-minded,' but the intellectual development of these is on a higher level than that of the imbecile. Thus there is an ascending scale of mental growth beginning at *idiocy*, which in reality is a condition of amentia, the lowest type of idiot being devoid of all attributes which go to form mind; the next condition is that of *imbecility*, where we reach the threshold of rudimentary intellect, and find a capacity to acquire knowledge in its humblest forms. A further step brings us to the *feeble-minded*, in whose mental organisation there are defects, and serious defects,

covering a wide range, but whose capacity to acquire knowledge and to benefit by education is larger than that possessed by the imbecile. With the 'feeble-minded' the failure may merely be shown in an inability to learn the obligation of conformity to the moral code laid down by society, or slowness in acquiring general knowledge.

Ætiology.—The ætiology of idiocy and imbecility is in many ways similar to that of mental disease in general, but it presents some special features. The causes can be grouped under two main heads: (1) Pre-natal; (2) Post-natal. *A neurotic inheritance* will be found to exist in a very large percentage of cases. The most common factors are insanity, epilepsy, alcoholism, and syphilis in one or both of the parents. Further, an imbecile may beget an imbecile child. Ireland, in his book on 'The Mental Affections of Children,' records many such cases. He quotes Halles, in his 'Elementa Physiologica,' as saying that 'he knew of two noble-women who got husbands on account of their fortunes, notwithstanding that they were almost idiots, and that their mental defect has spread for a century through several families, so that some of their descendants are idiots in the fourth and even in the fifth generation.'

Phthisis or other wasting diseases in the parents may act as determining factors in the production of idiocy in their offspring. *Syphilis* which has been contracted by the parent several years before the birth of the child is not very prone to produce imbecility in the latter, and the percentage of such cases is small; but syphilis in the mother at the time of gestation is more serious.

Alcoholism in the parent is no doubt a potent factor in the production of idiocy. Some authorities consider that too much stress has been laid on alcoholism in the parent as a cause of idiocy or imbecility in the offspring, but this view cannot altogether be accepted, and even though statistics may not give a very high rate of actual idiocy or imbecility, nevertheless when the number of children exhibiting less marked forms of degeneracy is included, the percentage of the mentally enfeebled progeny of alcoholics becomes most formidable. Further, it must be remembered that intemperance—and this term is here used in its broadest sense—lowers the resistance

of the organism, and thus enables other stresses to act with greater force.

The children of a *consanguine marriage* are not necessarily defective in mental development. The subject has been dealt with elsewhere, and need not be again referred to. The progeny of very youthful or aged parents frequently show mental and physical deterioration.

The next group of causes are those which arise during gestation. *Fright, shock,* and accident to the mother when pregnant are frequently stated to be followed by the birth of a weak-minded child. It is always necessary to receive with great caution causes assigned by the laity; nevertheless there is little doubt that severe shock to the mother may in certain cases in some mysterious way affect the fœtus *in utero.* Further, this may occur in a mother whose nervous system is stable; though clearly the result of shock will be more marked if she be a neurotic subject. Diseases contracted by the mother during pregnancy may lead to idiocy in the infant, no matter of surprise when it is realised how close is the inter-action of the circulation of the mother and child, and how profound must be the effect of vitiation in the mother's blood on the economy of the child.

The next group of causes are those which operate at the time of birth. *Prolonged labour* leading to protracted pressure on the cranium is a very important factor in the production of idiocy and imbecility, especially among first-born children. There are many more male than female idiots, a fact which probably accurately reflects the high percentage of cases in which there is a history of protracted labour, male infants being not uncommonly larger than female. A history of *asphyxia neo-natorum* is said by Langdon-Down to be obtained in twenty per cent. of all cases of idiocy. *Injuries by instruments* account for a small number of cases.

The *post-natal* causes are numerous, but the following are the most important. *Infantile convulsions,* from whatever cause, account for a large number of idiots and imbeciles. Seizures not only damage and produce a deterioration in the nervous elements, but they greatly interfere with further development, and the child remains weak-minded. Gross disease of or injuries to the brain or its coverings are

responsible for a small percentage of the feeble-minded; while the influence of specific fevers, such as scarlet fever, diphtheria, small-pox, measles, and whooping cough, is more serious.

In conclusion, defective mental development in some children is largely due to bad training and ill-regulated education. As with so many other abnormal conditions, the factors which tend to produce idiocy and imbecility are not uncommonly complex; it is usually incorrect to say definitely that the condition is due to any one stress, for it is far more frequently the result of a combination of evils. Take for example infantile convulsions; these may originate from some peripheral irritation, such as teething; still this stress acts with greater force upon the unstable than the stable. Imbecility may arise from anything that may interfere with normal evolution in the infant or young child, for with evolution we ought to get increasing complexity of the nervous elements, and the inter-connections between the nervous centres should become more numerous. It is in these that the idiot brain is found to be deficient, for not only is the brain more simple in arrangement, but most of the association fibres are undeveloped. Care must be taken not to confound cause with effect. Premature ossification of the sutures of the skull was at one time considered to be a cause of idiocy, but this view is not accepted at the present day, as observation has shown that it is the failure on the part of the brain to develop that permits of the early ossification.

Mental Phenomena.—The mental phenomena are not the same in all varieties of idiocy and imbecility, but as it will be simpler for the student to study the mental symptoms as a whole, a general symptomatology will first be considered, and later, when the different types of idiocy are described, the special symptoms of that type will be tabulated. It is impossible in a book of this size to enter into any great detail, for it must be borne in mind that the question of defective mental development is a large and important one, and for its proper review a whole volume would be required. The object here is to present a short review of the subject, and for more minute information the reader must turn to special works on idiocy. It has already been pointed out that the mental

defects of idiots and imbeciles vary in degree; at the lower end of the scale there is the idiot whose mind is almost a blank, and who is totally incapable of learning, while at the other end is found the feeble-minded individual, who has not only acquired an elementary knowledge, but may even be an adept at carving or some other form of mechanical occupation. Between these two extremes there are innumerable degrees.

The symptoms will be found to be partly negative and partly positive; in other words, there will be certain mental attributes missing owing to failure of development of the higher centres, and these give negative results; but further, there will be certain abnormal mental symptoms present, produced by the over-action of lower centres which are not controlled as they should be owing to the imperfections in the higher levels.

Memory.—The power of recall in idiocy and imbecility varies greatly, but frequently there is some deficiency even in the most intellectual of the feeble-minded. They have difficulty in forming associates, and unless ideas are associated the memory is apt to be faulty. Inattention also interferes with a sound memory, and most idiots are readily distracted. In some of the feeble-minded the power of recall may be extraordinarily great, but the possession of such a memory is usually of little value to its owner, as it is generally highly specialised, and seems to be developed at the expense of all other faculties. The child may be a wonder at figures or a genius at music, but totally unable to remember matters necessary for the ordinary conduct of life. Language may never be acquired, and when it is remembered how important word-ideas are to memory—for it is by these tokens that finality is placed on all incidents and thoughts—it will be understood that their absence in the mental equipment of an individual must seriously cripple his power of recall. In the higher types of imbecility the memory may slowly be acquired; at first the child recalls things that he has seen previously when again placed before him, and later he may be able to reproduce them by ideas.

Attention.—The faculty of attention is an attribute of late development in the normal child; in the feeble-minded, mental evolution usually stops before it is fully acquired.

Passive or spontaneous attention is attention in its humblest form, and it is upon this that we largely rely as a safeguard against sudden dangers. Even this type of attention is absent in some idiots, and in consequence their powers of self-preservation are limited. Inattention may be due to weakness of the stimuli which reach the brain, and this condition may arise from some defect in the special sense-organ itself or in the afferent fibres leading to it. Those idiots who have no power of voluntary attention are uneducable; the greater the faculty of attention the easier is the training. In some cases the stimulation of one sense-organ is not sufficient to attract the attention; but if the stimuli are such that they are capable of acting upon two or more of the senses at once, interest may be aroused. This is found to be especially the case when the visual sense is one of the senses acted upon.

Sensation and Perception.—Sensation is defective in a large percentage of idiots and imbeciles. The threshold of minimal intensity seems to be deeper than in the normal subject, and in consequence the stimulus must be greater before it produces a reaction.

Sight.—About eight per cent. of idiots are born blind, and many become so within the first few years of life. Apart from actual blindness, many others have serious defects in their visual apparatus, such as myopia, hypermetropia, astigmatism, cataract, strabismus, nystagmus, and Daltonism.

Hearing.—Hearing may be defective in all types of feeble-mindedness, but care must be taken to distinguish between partial deafness and inattention. Deafness may be the cause of mutism, and in combination they greatly interfere with education. The deprivation of one sense, or even two—though the latter is clearly a more serious condition—does not necessarily lead to weak-mindedness; nevertheless, the lack of a special sense, such as sight or hearing, frequently connotes idiocy, for that which has given rise to the one may also produce the other.

Tactile Sensation.—There is usually some diminution of tactile sensibility, and in some cases this is very marked. The idiot handles things in a clumsy way, and frequently drops them. The feeble-minded frequently exhibit diminished sensibility to heat and cold. Pain is not so acutely felt,

neither does it appear so early as in a normal individual. Occasionally the tactile sense is found to be developed to a high degree of perfection.

Taste.—Perversions of taste are common, and the idiot will frequently, if permitted, eat revolting matter. Even the higher types of feeble-minded persons commonly show difficulty in distinguishing between salt, sweet, bitter, and sour articles.

Smell.—Smell, like all other special senses, is usually imperfect, but in a few isolated cases it will be found to be abnormally acute.

Organic Sensations.—The organic sensations are usually feebly developed.

It is not always clear in a given case whether the defect is greater in the senses or in the perceptive powers, and in all probability the latter are usually at least as much at fault as the former. Qualitative perception, such as colour, may be present, but the space and time perceptions are usually lacking. The normal child soon learns, through its tactile and visual senses, the position of things in space, but this faculty as a rule is very defective in the feeble-minded. Similarly, temporal perceptions are wanting, and many imbeciles have no idea of duration. The general diminution of special-sense sensibility and inability to perceive is one of the chief difficulties in the training of idiots and imbeciles; and further, it largely accounts for the failure of their mental development, for it is by sensations that knowledge in the first place is acquired.

Emotions and Sentiments.—Pleasure and displeasure are not exhibited in the lower grades of idiocy, and it is only in the highest types of feeble-minded persons that they are found to be developed in any great degree. A strong stimulus may produce a reaction either of pleasure or pain, but the description of some accident or the breaking of bad news seldom affects them. The idiot responds merely to physical pain, and not to moral. Many imbeciles laugh in an automatic way, but it is the laughter of a vacant mind. They may take violent likes and dislikes, but these may only be temporary; the enemy of to-day may be the friend of to-morrow. The æsthetic sentiment is not usually much developed, and even

when present it is of a perverted kind. The idiot will clap his hands when he hears music, but it is the sound and rhythm that please him rather than the melody and composition, and he would probably be equally pleased with the beating of a drum.

The religious sentiment is usually lacking; with the idiot there is no thought beyond the present. Truth is not a strong point with the feeble-minded; they do not hesitate to lie when they wish to protect themselves against accusation. With the average idiot, right and wrong, truth and falsehood, are all alike; he draws no distinction between *meum* and *tuum*. Altruism is not a virtue met with among imbeciles; they recognise but one person, and that is self. They may be boastful with an exaggerated idea of their own importance, and are frequently irritable and intolerant of any interference. The feeble-minded are usually inquisitive, and even in the lower grades curiosity may be a prominent feature. An idiot is indifferent to his general appearance, but in the higher types of imbecility there may be vanity and extravagance in dress.

Morals.—The moral sense is never highly developed in the feeble-minded, and it may be entirely absent. They have little sense of honour, and are inclined to gratify the desires of the moment irrespective of the consequences incurred. They readily become the dupes of unprincipled persons, as their pride is easily flattered. In some of the higher classes of feeble-minded individuals it may be in the moral sense that the mental deficiency is most conspicuous. Such persons are often grossly dissipated, and all the lower instincts seem to run riot, as there is no inhibitory control to regulate them. Idiots may exhibit great cruelty towards animals, and be brutal in their treatment of children and feeble persons. They may be very passionate and reckless. On the other hand, many idiots are quite docile, and soon learn the things which please or displease those who have authority over them.

Personality.—The lower class of idiot has probably no personality. Any thoughts that he has centre round the most humble of organic sensations, such as hunger and thirst; even those in the next grade higher in the intellectual scale

usually speak of themselves in the third person. The 'ego' is composed of the sum-total of all sensations and ideas at any given moment, together with the standard ideas of self which have been derived from the social, moral, and other self-concepts. Kinæsthetic sensation plays an important part in the building up of the idea of self; and if this sense is deficient, the self-concept must be inaccurate, for the very data upon which it is formed are faulty.

Occupations.—The lowest class of idiot is quite unteachable, and he never occupies himself with any kind of useful employment. He is frequently destructive, not necessarily with a purpose of destroying, but rather as a means of passing time. The idiot whose tendencies are vicious will destroy for the pleasure it gives him to do damage.

The next class are those who are late in learning simple occupations, and who never get beyond elementary attainments. The higher types may exhibit great aptitude in learning special kinds of work. Music seems to appeal with peculiar force to the feeble-minded, and many of them acquire some knowledge of the subject. Mechanical occupations may be quickly learned, and some imbeciles show skill far above that of the average normal person in wood-carving and similar pursuits. In isolated instances the talent exhibited amounts to genius. Many of the 'mathematical wonders' are individuals who belong to the class of the feeble-minded. Nevertheless, they are capable of performing great feats of mental arithmetic. Mimicry is a common pastime with imbeciles, and some of them are very gifted in their power of imitating others; and advantage is taken of this instinct in training them. The great difficulty in teaching the feeble-minded is their inability to concentrate their attention; they are readily distracted and their mind wanders from subject to subject. On the other hand, if once they have learnt to do some craft they usually prove to be excellent workmen, as they pursue their calling in an automatic fashion.

Conduct.—The conduct of these individuals varies according to the profoundness of the mental weakness. The behaviour of the lowest type of idiot is in keeping with his mental state; he is totally incapable of looking after himself, and is unable to dress or feed himself. In the next grades one child is

obedient and easy to manage, while another is sullen and passionate. In some of the feeble-minded, errors of conduct may be the only feature which distinguishes them from the normal individual. A child of this class may be apparently bright and quick at acquiring knowledge, and yet fail to keep himself clean or attend to the calls of nature. The various defects of conduct common to the feeble-minded are too numerous to detail here, but they range from failure to attend to the humblest functions of the body to an inability to acquire a knowledge of the social and moral laws of the community; they may be errors of omission or commission.

Judgment.—The judgment of imbeciles is always defective. A sound judgment is dependent upon the possession of many attributes and the proper working of these attributes. A keen observation, a good memory, and an absence of strong emotional feelings, all go to make sound judgment; and as these are qualities which are absent in most of the feeble-minded, their judgment must suffer in consequence.

Physical Symptoms.—The physical changes commonly observed in idiocy and imbecility are those which are frequently spoken of as the physical stigmata of degeneration, and include abnormalities and deformities in almost every part of the body.

Bones.—The stature is frequently undersized, and the long bones are unduly curved. The skull may be abnormally large or very small, or it may be misshapen and asymmetrical. The shape of the head varies greatly in different types of imbeciles. The forehead may be receding, making the head appear to be pointed. The occipital region is often small, giving the back of the head a flattened appearance. The cranial sutures may ossify too early or the union may be delayed; in the latter cases there may be marked ridges of bone formed. The palate is usually high, narrow, and V-shaped. The teeth are crowded together. The lower jaw is receding, and this alone gives a weak-minded appearance. The ribs are rickety: the chest is deformed and not uncommonly pigeon-breasted.

Teeth.—The teeth are badly formed and dentition is late. They are frequently crowded together and may not show the

full complement. They readily decay, and in some instances the enamel is not properly formed.

Eyes.—The orbits may be too close together or too widely separated. The eyes may be obliquely placed, and the pupils oval in shape. Strabismus and other disorders of the visual apparatus may be found, but these have already been mentioned.

Ears.—The conformation of the ear frequently exhibits marked defects. For example, they may be set too far back, the pinna be badly formed, and the rim or helix absent; abnormalities of shape and size may be noted in all or some of the other prominences and ridges, and in the fossæ.

Heart and Circulation.—The heart may be small, and there may be congenital malformation of one or more of the valves. The circulation is feeble, and the fingers and toes are cyanosed.

Respiration.—The respiratory movements are shallow, and there is a deficient entry of air into the chest; this fact, together with the bad nutritional state so common in the feeble-minded, renders them especially liable to phthisis and other diseases of the chest.

Gastro-Intestinal Canal.—The papillæ of the tongue are hypertrophied. The tonsils are frequently large, and the naso-pharyngeal passages are filled with adenoids. Food is not properly masticated. The bowels may be constipated, but at times these patients suffer from obstinate diarrhœa.

Skin and Appendages.—The skin is frequently coarse, and the subcutaneous tissue thickened. The hair is brittle; it is absent from the face of the male idiot, but the female not uncommonly exhibits a downy growth. Pubic hair is usually absent. The nails are brittle and ridged.

Sexual Organs.—The sexual organs are not infrequently malformed, the following being the most common defects: undescended testis, genitals undeveloped, hypospadias and epispadias, and in the female atresia of the vagina and undeveloped ovaries; menstruation is delayed or entirely absent.

The sexual instinct is absent or very weak in many idiots, but in a large number of imbeciles it is abnormally strong or may exhibit perversion. Masturbation and other vicious practices are very common.

Nervous System.—The nervous system presents many sensory, motor, and central defects. Sensation is dulled, and the superficial reflexes are diminished. Saliva frequently dribbles from the mouth, the normal pharyngeal reflex being absent. The bladder and rectum empty themselves periodically and uncontrolled, but the fault is usually central and not spinal. The reaction times are all slow.

The motor disorders are numerous and very instructive. The microkinetic or spontaneous uncontrolled movements normally seen in infants, are absent or deficient in the idiot. Some children are absolutely motionless, but others are in constant movement. The movements of idiots are more automatic and regular than the spontaneous actions of a healthy child. The body may be swayed backwards and forwards, or constantly rotated, or violently jerked from side to side. The fingers and hands may never remain quiet, the movements consisting of twitching or slow flexion and extension. Some imbeciles hold their hands against their face, gently moving their fingers over the eyes and nose. The voluntary movements are slow and badly performed. They are very late in learning to walk. Co-ordination is faulty, and the finer adjustments cannot be performed, or are accomplished with great difficulty. This is the cause of some of these children not being able to dress themselves.

Idiots and imbeciles exhibit almost every degree of muscular weakness, paresis, paralysis, hemiplegia; or there may be a general debility, which renders standing or walking impossible. Tremor is also a common symptom. The higher types of mental enfeeblement do not exhibit any of these defects.

Speech.—At all times speech is slow to develop in children who exhibit signs of feeble-mindedness. Most idiots and many imbeciles never progress further than to employ a gesture-language, or at most a few simple words. Sollier has divided idiots who exhibit mutism into two classes: (1) Those who can understand what is said to them, but cannot speak themselves; (2) those who can neither speak nor understand. Some weak-minded children never acquire a proper language, but coin words of their own, which they always use to designate the same thing. It is extraordinary how quick mothers

and nurses become in learning what these sounds mean, for at times they are nothing more than guttural explosions. The failure to acquire the faculty of speech is due, in the vast majority of cases, to defects in the brain itself, and not the result of respiratory or laryngeal deformities. The child who understands language, but, on account of some error in the executive, is unable to speak himself, is always much more teachable than the idiot who can neither speak nor understand. Deaf-mutism is rare in idiocy. In many imbeciles the voice is harsh and monotonous. Stammering is common.

Handwriting.—Handwriting is a difficult accomplishment, as it not only requires knowledge of letters and words, but the muscular movements are very complicated, and to form letters properly a high degree of co-ordination is requisite. Now, many of these essentials are lacking in the idiot, and consequently he cannot write. Some of the feeble-minded will draw and copy figures or signs, but as symbols they mean nothing to them. Mirror-writing is easily acquired by some imbeciles; it is usually produced by the left hand and is written from right to left. In all writing the upstrokes and downstrokes are of the same thickness, as the child presses the pencil heavily on the paper.

Expression.—It is not common to see an imbecile who has beautiful features, but occasionally they are met with in the higher types of feeble-mindedness. The features are usually coarse or very small, and the head misshapen. The expression varies greatly; some of the more intellectual are bright and cheerful, but the great majority have a degraded appearance. Some are always grimacing, some laughing, others look bad-tempered and forbidding. The expression may be vacant and devoid of any animation. Many idiots seldom move their eyes apart from their head. The posture of the body and limbs is usually awkward and clumsy, and the gait is waddling.

Sleep.—Some of these individuals sleep by night and day, and are always drowsy; in others the condition is rather one of over-activity, the hours passed in sleep being few. The sleep of the feeble-minded may be defective in quality, and the child may be disturbed by dreams and night terrors.

Varieties.—The usual types of idiocy described are: (1) *Genetous*; (2) *Mongolian*; (3) *Microcephalic*; (4) *Hydrocephalic*; (5) *Hypertrophic*; (6) *Eclampsic*; (7) *Epileptic*; (8) *Paralytic*; (9) *Traumatic*; (10) *Inflammatory or Post-febrile*; (11) *Syphilitic*; (12) *Cretinoid*; (13) *Idiocy from deprivation of senses.*

(1) *Genetous.*—Genetous idiocy is the name given by Ireland to that class of congenital idiot which does not rightly fall under any other division, the cause not being traceable during life. There is probably some hereditary defect. There may be no deformity of head or limbs, but many are of short stature. The palate is highly arched and the teeth decayed; the ears are large and defective; the child is dull with a degraded expression; the gait is clumsy and shuffling. The circulation is feeble, and chilblains are common. In brief, the genetous idiot presents many mental and physical stigmata. Rickets and scrofula are frequently associated with this condition. Automatic movements are common. The prognosis as to possibility of training is fairly good in cases of genetous idiocy when the child is well nourished with good circulation, and when the grasp and tactile sensibility are good, and the power of concentration of attention is present.

(2) *Mongolian.*—The Mongolian type of idiocy belongs to the class of genetous idiots, and is so named from the close resemblance of the physiognomy of these cases to that of the Chinese. The head is usually small, and rounded with broad features and obliquely placed eyes. The nose is flattened. The hands and feet are broad. The figure is squat, giving a dwarfish appearance. The fungiform papillæ of the tongue are hypertrophied. Dentition is very late. The skin is dry and harsh. The Mongolian idiot is usually good-tempered, but exhibits very little intellect. He is very imitative and easily pleased. Many have organic disease of the heart and feeble circulation. The prognosis is usually far from good.

(3) *Microcephalic.*—The microcephalic type comprises those cases in which the head is unduly small. When the circumference of the head is less than seventeen inches, the condition always connotes idiocy. But it must be borne in mind that idiocy is produced rather by disease than the smallness of the

brain. The head is narrow and oxycephalic in shape. Idiots of this type are usually unduly active with restless movements. They are late in learning to walk. They are very deficient in mental capabilities, as they have little or no power of attention. Some are very quarrelsome and spiteful, others are more easily managed, and even become affectionate towards those who tend them. They have no sense of shame. They frequently show pleasure, and may be very imitative, and are fond of music. The prognosis is decidedly bad.

(4) *Hydrocephalic.*—The hydrocephalic type is apt to be confused with the hypertrophic, but the shape of the head differs in certain particulars. A large cranium does not always connote hydrocephalus, and many normal children have abnormally large heads. The hydrocephalic head is rounded in shape, as the antero-posterior and transverse diameters are nearly the same in measurement. The widest circumference is usually at the temples. The width between the eyes is increased. The head in the child with rickets may be confounded with hydrocephalus, but in the former the antero-posterior diameter is lengthened, and the fontanelle is depressed, while in the hydrocephalic head it is raised. Hydrocephalus may be congenital, or may be acquired during the early years of life, and it may be either acute or chronic. Hydrocephalus may cause early death. In some cases recovery may take place, but if it persists and the child lives, the damage to the brain usually causes idiocy. Pressure may give rise to deafness or impairment of vision. These children are generally good-tempered and friendly. They move slowly, and speech is harsh and monotonous. Growth is often interfered with, and in consequence this type of idiot is short in stature. Some of them can be taught to read and write, but the moral sense is usually defective. The gait may be unsteady, or they may not be able to walk at all. The prognosis is practically hopeless.

(5) *Hypertrophic.*—In the hypertrophic idiot the head is square-shaped or elongated in the antero-posterior diameter, the greatest width being above the superciliary ridges. The hypertrophic head does not attain so large a size as is found in some cases of hydrocephalus. The condition is a rare one, and usually develops during the early years of life. Mentally

these children are dull, and slow in performing movements. Headache is often a prominent symptom.

(6) *Eclampsic.*—In eclampsic cases of idiocy convulsions develop in infancy from teething or some similar stress. They may continue with more or less frequency for some months or years and then disappear, but their effect on the brain may be so serious as to leave the child idiotic or imbecile. He is usually excitable and passionate, and on account of the low degree of attention is generally unteachable. He may appear bright, and may be clever at imitation, with quick and restless movements. The moral sense is undeveloped, and there is no sense of shame. The prognosis largely depends on the extent and severity of the convulsions.

(7) *Epileptic.*—Epilepsy always tends to produce weak-mindedness, whether by a process of dissolution or by interference with evolution. Epilepsy may appear at any time, but in the majority of cases of epileptic idiocy the fits first show themselves at the time of teething. Shuttleworth and Fletcher Beach[1] describe three classes of epileptic idiots: '(*a*) Bright, well-made children, who progress at school, and take an interest in their work, whether educational or industrial; (*b*) also well-informed children, who are very listless, but can talk and take an interest in what goes on around them. They usually make fair progress, but when doing well a succession of fits comes on and throws them back, so that for a time they become lost and dazed; (*c*) These have a more animal type of face, are dull, and in consequence of the frequent fits make no progress whatever.' Many of these children are irritable and violently impulsive, and they form one of the largest divisions of idiocy. The prognosis varies with the frequency of the seizures, but as a class they are very disappointing.

(8) *Paralytic.*—In paralytic idiocy the damage to the brain may take place before or after birth. The paralysis is usually one-sided, and there is a spastic rigidity of the muscles. The arm is generally more paralysed than the leg. The mental faculties are impaired in the majority of cases, but in a fair percentage much good can be done by training.

(9) *Traumatic.*—Traumatic idiocy is produced by a blow on

[1] Allbutt's *System of Medicine*, 'Idiocy and Imbecility,' vol. viii.

the head, a fall, or some prolonged pressure on the skull, such as may occur during a protracted labour in a woman with an abnormally small pelvis. The degree of mental enfeeblement is to a large extent dependent upon the amount of damage to brain-structure, but in some instances an apparently slight injury is followed by serious symptoms. The child is usually normal until it has some fall or injury, after which the mental development is affected. Some of these children are strong physically, and even learn to read and write, but they are always backward, and when they reach adolescence their mind is equal to that of a child of six or eight. In those cases where the injury takes place at the time of birth, as for example during the employment of forceps, the degree of idiocy may be very profound.

(10) *Inflammatory.*—Inflammatory idiocy is usually the result of inflammation of the brain and its membranes, the condition being set up by some complication occurring at the time of or immediately following diseases, such as scarlet fever, typhoid, measles, or whooping cough. The degree of feeble-mindedness is dependent upon the extent of the damage to the brain. Many of these children greatly improve with proper training. If the brain is seriously injured the child remains degraded and uncontrollable.

(11) *Syphilitic.*—Inherited syphilis is by no means a common cause of idiocy, and most authorities agree that the cases assignable to this cause are under two per cent. The child exhibits symptoms common to syphilitic children, and frequently develops normally until about ten years of age, when convulsive seizures supervene, and from this time onwards there is not only no further mental development, but a definite deterioration.

(12) *Cretinoid Idiocy.*—Cretinoid idiocy is closely allied to cretinism, and some authorities speak of it as sporadic cretinism. Ireland states that 'cretinoid or pachydermic idiocy appears to be a congenital or infantile form of myxœdema.' The mental and physical symptoms closely resemble those already described under Cretinism. The infant at first appears to be normal, but during the early years physical abnormalities or mental deficiencies are noticed. Growth is very slow, and many of this class remain dwarfed.

The limbs are short and thick, and the skin is dry and harsh. The eyelids are swollen. The head is flattened and the nose broad. The lips and tongue are thick. Dentition is delayed and defective. The abdomen is flabby and protuberant. The sexual organs are usually small and ill developed. Speech is slow and the vocabulary small. The voice is harsh. In most instances the thyroid gland is absent. The gait is slow and uncertain. The temperature is sub-normal, and this type of idiot feels the cold. He is usually good-tempered, but is of poor mental capacity, and learns slowly.

Diagnosis, Cretinoid Idiocy.—The condition has to be distinguished from cretinism; in the latter there is a tendency to premature ossification, but in the sporadic form ossification is retarded. In the cretin the thyroid is affected with hyperplasia or some cystic degeneration; in the sporadic form of cretinoid idiocy it is absent.

Prognosis, Cretinoid Idiocy.—With treatment the mental and physical condition improves, but the patient must continue to take thyroid gland for the rest of his life, otherwise he will relapse into his former cretinoid state.

Treatment, Cretinoid Idiocy.—The special treatment of cretinoid idiocy is the administration of thyroid gland; this may be given in the form of liquid extract or tabloid, the dose varying with the age of the child. The physical health of the child should be carefully watched while thyroid is being taken, as he may lose weight very rapidly, or have a sharp rise of temperature and great increase in pulse-rate, and in some cases severe diarrhœa and collapse.

(13) *Idiocy from Deprivation of Senses.*—In order to produce idiocy purely from the deprivation of senses, two or more important senses, such as sight and hearing, must as a rule be absent. It is possible to teach these children, but the time and labour required are very great, as progress is very slow and tedious.

Diagnosis of Idiocy.—The diagnosis of idiocy is not always easy in infants, but there are one or two points which help the physician in forming a diagnosis. The infant may not take the breast like the normal child, and may have to be fed with a spoon. Another important symptom, and not uncommonly the first indication that all is not well, is that the

usual micro-kinetic movements are absent, the infant lying in his cot and rarely moving. As months pass the diagnosis becomes easier. Late dentition, late development of speech, and late learning to walk are all symptoms which should cause the physician to suspect idiocy or imbecility. Fits of violent and uncontrolled passion are suggestive of mental enfeeblement. The presence of any physical stigmata should be observed. Parents naturally try to prove that their child is normal, and, laying stress on his better qualities, make light of his deficiencies. Test the child carefully yourself. Note whether he reacts to stimuli of sight and hearing or other sensory impressions. Examine the conformation of the head, and test the intellectual powers, comparing them with the faculties of a normal child of a corresponding age and social status. Inquire for any history of convulsions or head-injury.

General Pathology and Pathological Anatomy.—There are a great variety of changes to be found in the skulls and brains of idiots, of which the following are the most common. The skull-cap may be abnormally thickened or thinned, and when held up to the light may be found to be diaphanous in places. Usually in those cases where the brain is unilaterally atrophied, the skull-cap will be found to be greatly thickened on the side where the brain is wasted. The shape of the skull may be abnormal, the condition being dependent upon early or late closing of the various sutures. Wormian bones are not uncommonly found. The membranes may be thickened and opaque in appearance. The dura mater may be adherent to the skull. The pia mater may contain miliary tubercles. The sub-arachnoid fluid may be greatly increased and the ventricles dilated.

The convolutions of the brain itself may be more simple in arrangement than in the normal individual. The cerebrum may be abnormally small and atrophied, while the cerebellum may not be correspondingly diminished. Hypertrophy of the brain substances is less frequently seen, and is usually due to a large increase in the neuroglia.

Sclerosis of the brain may be either diffuse or in disseminated patches, the former being more common. Shuttleworth and Fletcher Beach, in their monograph on Idiocy and

Imbecility in Allbutt's 'System of Medicine,' describe this condition as follows: 'It involves a considerable part of one hemisphere and is not distinctly circumscribed; the medullary substance is chiefly affected. The frontal, ascending frontal, ascending parietal and occipital convolutions are those which are mostly implicated. The white matter is hard, and looks on section like the white of an egg, though sometimes there is a honeycombed appearance. The increased hardness and density is due to an overgrowth of the neuroglia, which compresses the nerve-fibres and finally causes their disappearance. The disease is due, no doubt, to a chronic inflammation of the membranes, and we find on examination increase and distension of the blood-vessels, infiltration of the perivascular sheaths with leucocytes, which sometimes make their way into the surrounding tissue, and occasionally an increase of the fibrous tissue around the vessels. In disseminated sclerosis patches are found scattered throughout the cerebrum, cerebellum, basal ganglia, pons, medulla, and spinal cord. The convolutions of the brain are usually exempted. The patches are circumscribed and tough, and in the spinal cord vary in size from a pin's head to a hazel-nut; they are usually large in the brain-matter itself. The meninges of the brain and spinal cord may be healthy, or they may be signs of congestion or chronic inflammation. The cerebro-spinal fluid, which is increased, is sometimes cloudy, and the lateral ventricles are dilated.' On the other hand, the brain substances may be softened in places, usually as the result of some defect in the circulation.

Porencephaly is a rarer condition than most of those just described. The term was first used by Heschl. The condition may be either congenital or acquired. The congenital form usually develops about the sixth month of intra-uterine life. There may be a cavity on the surface involving one or both hemispheres, and it usually communicates with the lateral ventricles. Cysts may be scattered about in different regions, the most common being frontal, ascending frontal, and ascending parietal, temporo-sphenoidal, and occipital gyri. There is usually paralysis of the limbs on the opposite side, the severity depending on the extent of the damage to the brain. Some of the above cavities may be the result of small hæmorrhages. The tumours of the brain are in the great majority of

cases tuberculous in nature. Gliomata are more rarely met with.

The microscopic changes found in the brain of idiots consist largely of nerve-cell changes. The cortex is very narrow, being about half its normal size. The nerve-cells are rounded and are deficient in processes, or the processes exhibit degenerative variations. The number of cells is also reduced, and the several layers are not clearly differentiated. The association-fibres are greatly diminished in number. The following are the most noticeable changes found in the various types of idiocy:

(*a*) *Genetous* types. The skull is often abnormally thin or thick. The convulutions are single in arrangement and frequently narrower than usual, the frontal convolutions often appear very small. The cerebrum may not properly cover the cerebellum, the latter being in proportion larger than the former. The base of the brain may be asymmetrical. The corpus callosum may be entirely absent. Microscopically the nerve-cells will be found to be deformed in shape and few in number, and the whole neuron is degenerate. Fatty granular cells are met with. There is frequently great neuroglia proliferation. The association-fibres are few and less complex, and the vessels are small and degenerate.

(*b*) *Microcephalic.*—The cerebral hemispheres are small and ill developed, and portions of the encephalon may be absent. The cerebellum is large in proportion to the rest of the brain. The brain may be asymmetrical and the convolutions simple in arrangement. The frontal gyri are exceptionally small. The microscopic changes are such as occur with failure of development and degeneracy.

(*c*) *Hydrocephalic.*—As this may be either congenital or acquired, the morbid changes vary according to the cause. The cranial bones are usually greatly thinned. The circumference of the head may reach very large proportions. The intra-cranial fluid is much increased, and may weigh as much as twenty pounds. This fluid is slightly albuminous, has a specific gravity of about 1010, and is mostly contained in the distended lateral and third ventricles. The pressure may lead to atrophy of the surrounding portions of the brain.

(*d*) *Hypertrophic.*—This condition is due to great increase in the white matter. The convolutions are flattened. The chief seats of the disease are to be found in the two hemispheres, and more rarely in the corpora striata and optic thalami.

(*e*) *Eclampsic.*—This condition is very obscure. Ireland writes that he is inclined to think that the lesions most commonly observed are adhesions of the membranes, some wasting of the gyri, especially of the frontal ones, and greater hardness and toughness of the brain-tissue than is usual.

(*f*) *Epileptic.*—No pathological changes are known which can be described as pathognomonic of epilepsy, but the brains of epileptic idiots show changes which are the result of failure of development, and which are not peculiar to this condition. Bevan Lewis has described the inflated spheroidal cell so commonly found in the brains of epileptic idiots, and Andriezen confirms Bevan Lewis's observations, and states that he believes the morbid process underlying epileptic idiocy to be a hardening of the neuroglia fibre-cells with destruction and atrophy of the nerve-cells.

(*g*) *Paralytic.*—This is usually brought about by hæmorrhage in the cerebral tissue, and is frequently occasioned by some degenerative change in the cerebral blood-vessels.

(*h*) *Syphilitic.*—In individuals dying from syphilitic idiocy, the cranial bones and membranes are usually found to be thickened. The blood-vessels may show a condition of endarteritis, which in turn has given rise to atrophy of the nervous tissues.

Treatment of Idiocy.—The treatment of idiocy and imbecility covers a wide field, including as it does not only the treatment of the various factors which may have given rise to the failure of mental development, but also the physical, intellectual, and moral training of the afflicted individual.

If there is any apparent cause for the idiocy, it must be treated. Next attend to the nutrition of the body, and carefully regulate the diet. The food should be simple and farinaceous in nature. Meat should be limited. Many idiots will eat to excess, if allowed to do so, and their meals should be supervised by a nurse or some responsible person. The clothing should be light but warm in texture, as these children are sensitive to cold. The teaching of cleanliness is frequently difficult, and it

may take many months of training before the nurse is rewarded by the child giving some sign when he wants to attend to the calls of nature. If the patient is an adult, bathing him in cold water or depriving him of some luxury every time he offends may act as a stimulus to his memory on subsequent occasions. Further, the child must be taught to wash and dress himself. Cleanliness can be acquired by carrying out the ablutions at regular times, and a nurse should stand near and see that the operations are thorough and effective. Physical drill and exercises are very important, but care should be taken not to exhaust the patient.

The mental training should be started gradually, the first aim being to develop the acuteness of the various senses and strengthen the powers of attention. The sense of sight can be cultivated by using coloured balls, and making the child place them in cavities of the same colour. Matching bricks or wool is also a useful exercise. If the idiot has difficulty in concentrating the attention, use bright and glittering objects. The sense of hearing is developed by musical notes, bells, and various sounds of the human voice. Touch should be cultivated in the first place by coarse movements, such as putting nine-pins into sockets, passing buttons through button-holes, or lacing up a garment. Teach the difference between smooth and rough articles, such as velvet and a grater; between sharpness and bluntness, between things round and things angular. Appreciation of heat and cold is taught by dipping the child's hand into hot or iced water.

An important lesson to be learnt is that fire burns, and this should be taught early. The difference between weight and lightness can be acquired by making the child lift cans which are filled with different amounts of shot. Later on the finer movements and adjustments may be taught by getting him to string some small beads, or balance unstable articles on the table. The senses of smell and taste are not so important, but they should be developed by sweet and nauseous odours, and sweet or bitter solutions. If the attention is very defective, very little progress will be made until this is more under the child's control. The profound idiot must be attracted by loud sounds or bright lights, or by heat and cold, or mild electric shocks.

Learning to walk is always a greater effort to the feeble-minded than to the normal child, and when it is acquired the act of walking is commonly performed in a clumsy manner. With all movements the defect in execution may be due either to mental incapacity to understand or imitate, or to some defect of the nervous or muscular system. Clearly it is important to detect in every given case where the error lies. A special swing has been constructed for teaching the idiot how to walk. In this apparatus the child swings with his feet and legs hanging free, and as he swings the feet, they lightly touch a tilted board, and the child usually instinctively moves one leg in front of another. Later the child can be placed in a standing position leaning on some parallel bar which moves on wheels. If the muscles are weak they must be massaged daily. Learning to speak is one of the greatest obstacles imbeciles have to overcome. They usually understand what is said to them long before they can express their own thoughts in words ; one of the difficulties being that many of them have no ideas to express.

The respiratory apparatus must be examined, and any defects should be rectified, if possible. Remove adenoids or abnormally large tonsils. Make the child perform breathing exercises. The ear must be trained to distinguish sounds. Next make the child imitate the lip and tongue movements of the teacher. The nasal, lingual, and labial sounds are usually the easiest to acquire. The child should be made to repeat short words after the instructor. The number of words that can be learned varies greatly in different types of idiocy. If a child does not learn to speak before he reaches the age of six or seven, his vocabulary will never be large. Some children coin words of their own, and as a result they are always somewhat difficult to teach. Writing is the next step to be undertaken ; it is an accomplishment that may never be acquired, as it is a very complex adjustment, and far beyond the powers of many idiots. Make them draw lines or figures, or make tracings. An idiot may write a word or even words, and not understand what the symbols mean.

Industrial education is a factor of great importance in the training of all classes of feeble-minded individuals. Object-lessons must be the basis of all teaching, and in this way the

kindergarten system is an excellent one. Many of these children who are educable will be found to have special aptitude for different varieties of work. One will be quick at learning carving or basket-making, and yet be quite unable to acquire other accomplishments, however simple. The teaching of one art alone is not always the best form of education, but here the instructor must be left to decide in each particular case. There is a growing tendency in some countries to found colonies for the feeble-minded where they can either be taught for a number of years, or where they may live out their lives as a self-supporting settlement. Farming and horticulture are useful occupations for these patients, who with proper supervision may become valuable workers on the land.

Moral training is important; and it can be laid down as a fundamental rule that more will be done in developing the character of the imbecile by kindness than by harshness. He is usually very apprehensive and easily frightened. Unless a person is endowed with an enormous amount of patience, he should not undertake the training of the feeble-minded. Once the child is attached to his teacher, he will show sorrow if he displeases him. Punishment, no doubt, is required at times, but corporal chastisement should be avoided if possible. Encourage good behaviour by giving from time to time treats or luxuries, but let the delinquent be deprived of his pleasures. Remember that some children are unable to acquire a knowledge of the moral code; supervision should always be careful, as otherwise serious catastrophes may take place. Many of these patients will profess much, but their actions often belie their words. In conclusion, let it be borne in mind that frequently the most hopeless case may eventually learn something. Perseverance will often be rewarded, and the teacher may see his charge slowly emerge from complete mental darkness to a dawn of modest intellectual enlightenment.

Moral Insanity

Moral insanity is a form of mental disorder that is not recognised by all authorities. The moral sense is of late development, and consequently readily becomes affected in disease. This sense may be absent, defective, or altered—

(*a*) In idiots and imbeciles.

(*b*) In some children otherwise apparently normal.

(*c*) In some men of genius.

(*d*) In epileptics.

(*e*) In some cases as a first symptom in impending mental break-down.

(*f*) In some cases as a result of a former attack of insanity.

(*g*) In a condition of intoxication.

If we are to use the term Moral Insanity at all, it is to those cases in subdivision (*b*) that it should be applied. Some children differ from the normal in that no amount of severity or kindness will teach them the moral codes. As the child grows up, it fails to acquire such attributes as truth and virtue. Both in action and conversation we find the child to be unreliable; in the place of honesty we find pilfering, and instead of truthfulness, mendacity. To such a child there is no difference between *meum* and *tuum*. He sees something, desires it, and takes it. Often it is but the fleeting fancy of the moment which prompts the act, and he gratifies the impulse. In this way useless articles may be thieved, and even the thief himself can give no adequate reason for his action.

Frequently, too, this irresponsibility is coupled with great cunning in movements and guilelessness in conversation. It is not surprising that to the man in the street such a person is an abandoned criminal; and not only to the man in the street, but to the judge on the bench. To both alike, the physician who ventures to whisper that it is not crime but disease, may well appear to be himself insane or worse. For all that, the physician knows that it is disease, and wonders whether it can be just to punish a man for failing to possess an attribute which he never had, and had not the capacity to acquire. He wonders whether the august representative of the law would be logical, and hold a blind man to be negligent who did not see a portly policeman raise his hand to bid him stop. Then he tries to remember that the individual must suffer rather than the whole body, that it would encourage real crime to be lenient with seeming crime, that the line between sanity and insanity in such cases in

ill defined, and all other arguments that go to show that punishment cannot always be measured by responsibility. He is sorry for the individual nevertheless. The difficulty of these questions is great, and there is no room here for sociological considerations. Short, however, of this is the fact that a want of recognition of the existence of such a form of mental disorder or defect, as that which is described as moral insanity or absence of moral sense, may lead to miscarriages of justice in the form of punishment which no social exigencies demand.

Moral failure may show itself in other ways. With the onset of puberty fresh difficulties may arise, and grave offences against society be perpetrated. Persons may indecently expose themselves, or show other forms of sexual precocity. Pyromania is a form of impulse not uncommonly met with in individuals who are morally defective. False charges against others may be made by these moral perverts; women may accuse men of divers forms of rascality, and their evidence often wears the aspect of truth, for they are cunning liars and will concoct plausible tales. One may see in our courts of justice juries disagreeing on their verdict in charges of this kind, for there are always men ready to believe these accusations no matter how improbable or even impossible they may be.

Petit mal or the major form of epilepsy must be considered when examining a case of apparent moral insanity, for grave breaches of the ethical codes may follow seizures of this kind. These persons seldom have any delusions, and frequently show great intellectual power in other directions. A man of such pronounced and even phenomenal ability as to be called a man of genius is not uncommonly morally defective. The absence of any delusions does not connote sanity, for mental disorder may show itself by negative as well as positive symptoms.

Physical Symptoms.—The morally insane may exhibit no physical defects, but as they are usually the offspring of degenerate parents we find in a fair proportion of cases physical stigmata. The palate commonly is high, narrow, and unduly arched, and there may be abnormalities in the skull or limbs. On the other hand, the physical development may be good and the individual outwardly normal.

Diagnosis.—The history of the case must be the chief aid to a correct diagnosis. The parents are usually very neurotic, and one of them may have been definitely insane. Alcoholic tendencies, epilepsy, or other symptoms of degeneracy in the immediate ancestors are points of importance, and should be carefully recorded. Marked neuroses in the brothers or sisters frequently indicate that other forms of instability may be expected in the family.

The life history of the individual must be examined. As a child, was he addicted to lying or thieving? In his early education, when corrected, did he express sorrow when he sinned and was in danger of punishment, but quickly forgot and offended in the same way at the very next temptation? Was he of precocious development, maturing rapidly and brilliantly in certain directions, but abnormally backward in others? Or was he always behind other children of a similar age, late in learning to walk, late in learning to speak, slow in acquiring the various attributes which go to make the normal mind, or capable of acquiring only the most humble of these, and altogether failing to attain the highest? The morally unsound are usually wayward and volatile. They commonly either ignore authority, or recognise its controlling influence only when present. When puberty was reached were there acts of gross immorality; or was the individual dismissed from school because he was unmanageable and had a baneful influence on his fellow-students? Much assistance can be obtained from the history, and it is valuable when the conduct, which has given rise to a suspicion of mental disorder, comes to be considered.

If the charge is that of stealing, there is a difference to be discovered between the thieving of the purely vicious and the pilfering of the moral delinquent. Motive they may both have, though the truly morally insane individual will incur grave risks of punishment and disgrace for the gratification of taking some very trifling object. The vicious man hides his spoil; the other either leaves it lying about for all to see, or puts it in some drawer or box, unprotected by lock and key, and open to the inspection of any chance comer. Though cunning and deceitful in his methods, the morally insane person is almost childish in his ingenuousness,

and will show his ill-gotten gains to anyone, whether friend or foe.

There is no doubt that the majority of persons, for whom the plea of kleptomania is advanced when they are charged with stealing, are in reality accomplished thieves, and have no claim to be sheltered from the penalties of their wrong-doing. This being the case, it should make us all the more alert that persons deserving of protection should not be allowed to be swept in among the common herd of criminals. In brief, it is largely the conduct that is affected in the morally insane. In conversation they may be bright and intellectual, and perfectly capable of defending their actions by extravagant falsehoods; but the conduct is defective, and has probably been defective from childhood.

The offences they commit vary in gravity, but as a rule the punishment they risk incurring is out of all proportion to the advantages gained. A boy will set fire to a house either for the pleasure of seeing it burn, or to pay off some old score against a master or to punish some person who has annoyed him. Again, the manner in which the deed is done frequently mirrors the mental state of the delinquent. A girl will make a series of false accusations against a man, and will endeavour to support them by some methods devised by herself. A woman has been known to write libellous post cards to a man at his club, and in order to avoid suspicion she has from time to time addressed an abusive missive to herself.

Many are the difficulties and deep the pitfalls that lie in the path of him who has to decide whether a man is a criminal or morally insane. The line of demarcation between the criminal and the morally insane is necessarily slight. Viewed from the standpoint of a law-abiding subject, the criminal must be akin to the insane, in that to a normal mind the average profits of a career of crime bear no sound proportion to the price at which those profits are earned. Nor can there be any doubt that this common-sense aspect of the matter has a foundation in scientific fact. The majority of criminals are degeneratives, and many present abnormal mental characteristics. The argument pressed to a logical conclusion might go to show that crime is symptomatic of insanity, evidencing as it does a lack of

sense of proportion and of true mental balance. Here, however, the term 'morally insane' is applied only to those who are born deficient in a quality or attribute, and not to those who have lost that quality or attribute, or in whom it has become obliterated by conscious vice or by their environment. The difficulty of distinguishing between the two classes is great. Each case must be judged impartially and on its own merits, after the physician has conscientiously weighed the evidence which he has been able to collect.

Prognosis.—The prognosis is not good, and the tendency is for the patient to become more and more difficult to manage with increasing years. There are no recoveries, as the condition is due to a deficiency in the mental requirements to which neither time nor skill can add. The best result that can be hoped for is that with careful supervision the patient can be managed in his own house.

Treatment.—The prophylactic treatment lies in the prevention of marriage of degenerate persons. Early and wise education can assist in a few cases, but the majority of these children require very special training. It is useless to send them to ordinary schools, as before many months are past they will probably be expelled in disgrace. They should be sent to special schools, where their vicious tendencies are understood, and where, in the event of their failing to acquire a knowledge of the moral laws which rule society, they will be prevented from committing any serious offence. At adolescence and throughout early adult life a proportion of these cases drift into asylums or gaols, but many remain at large, a source of grief and anxiety to their friends and a perplexity to their medical attendants.

CHAPTER XX

FEIGNED INSANITY

In every branch of medicine and surgery the medical man may suddenly be called upon to decide whether in a given case the disease complained of is real or assumed. Mental disorder seems to be a favourite malady to feign, and no doubt, to the unskilled, insanity appears to lend itself more readily to deception than almost any other disease. The persons who are most likely to resort to malingering are criminals who are awaiting trial for some grave offence, or men desirous of escaping from one of the public services. Our military and naval surgeons are constantly encountering these persons, and it frequently requires the greatest tact and acumen to diagnose these cases successfully. But the feigning of insanity is by no means confined to the public and prison services, and most medical men in general practice from time to time meet with these malingerers. Physicians connected with railways, insurance companies, or benefit clubs are especially exposed to imposition of this kind, and even the general practitioner in his daily rounds may meet with it in schools and among his private patients.

No doubt in the great majority of cases there is some good motive for assuming disease, but this is not always true; and sometimes the motive is not apparent to the casual observer. Too much importance must not be attached to motive, otherwise there is a danger of being misled, for what might be considered by one person as sufficient reason for a certain action another might consider totally inadequate. The time of onset of the supposed insanity is a fact to be recorded. It is rare indeed for a man to simulate mental disease in order to avoid the suspicion of being connected with some crime. Mental aberration, if resorted to by the criminal, is not assumed until a charge has definitely been laid. Therefore care must be

exercised in collecting the data of the individual's conduct and conversation for some time previous to the crime in question. If he has already suffered from attacks of insanity earlier in life it may be possible for mental disease to reappear somewhat suddenly, but otherwise it must be remembered that, save under exceptional circumstances, the rapid development of insanity is not common.

This suggests the next point for investigation, viz. the mode of onset of the illness. Has it begun in the usual way with sleeplessness, and maybe a feeling of malaise? Was the man irritable, inattentive, and restless for some time before the more serious symptoms of mental disorder declared themselves? What is the family history of the individual? Does he inherit mental instability? Were his parents or immediate relations ever insane or subject to epilepsy or kindred diseases? The family history is not always obtainable, except maybe from the patient himself; and although definite proof of an unstable inheritance is an important factor in the consideration of a case, absence of any such evidence does not permit us to form any conclusion. Endeavour, if possible, to obtain a full account of the life history of the patient; make a record of the illnesses he has had, any known peculiarities of disposition, and whether he is noted for his sobriety or the reverse.

After these prefatory inquiries the immediate symptoms of the supposed disease should be examined. The student must, as has been before observed, remember that in a vast majority of cases of mental disorder the physical health is also affected. In some types of insanity the bodily health suffers severely, whereas in others the disturbances are less marked. This knowledge is very valuable when a decision has to be made whether disease is true or spurious. Endeavour to find out whether there is any apparent cause, mental or physical, for a mental break-down. Persistent refusal of food rather favours true insanity, for the simulator rarely permits himself to be fed by means of an œsophageal or nasal tube. Quantitative incoherence is almost impossible in a sane person, and if this symptom is present, there can be but little doubt as to the diagnosis being true insanity. If the reader questions this statement, let him try to be incoherent for three consecutive

minutes. During this time he will probably constantly repeat the same words, and will not then be incoherent the whole time. A sane man may wander in his conversation, and may stray from subject to subject; but he is usually readily followed by his audience. There is a vast difference between desultory conversation and true incoherence. When a stranger visits a person of unsound mind, the latter commonly appears to be much better mentally than he really is, as for the moment his attention is arrested or he is on his guard.

This characteristic is a very important one, and can be tested by anyone who visits an asylum. It is owing to this peculiarity that so many casual observers overlook insanity, and pronounce a man to be sane when in truth he is suffering from profound mental disorder. The visiting magistrate is frequently misled, unless he has learnt by experience that this pitfall lies in his way, and realises that fairly to examine a man's mental state it is necessary to probe somewhat deeper and not merely accept what appears on the surface. But how is it with the malingerer—is he willing to appear better than he really is? By no means; he is already afraid that he may not be judged to be insane, and he feels that he must run no risks. The advent of a stranger usually heralds the appearance of all symptoms, and the patient, so far from seeming to be better, is much more energetically insane than when alone.

Further, most insane individuals declare themselves to be sane, and disagree with anyone who even suggests that they are suffering from any form of mental disorder. The insane man will account for his altered thoughts and feelings in numberless ways, but he will rarely, if ever, assent to being considered of unsound mind. The malingerer is the very antithesis of this; he never asserts his sanity, unless it be in some half-hearted way. He wishes to be pronounced insane, and will not make any suggestions which might cause the physician to come to any other conclusion. It will often prove of the utmost value in determining whether insanity be true or feigned, to remember this point. The simulator is rarely content to be passive while the question of his mental state is being weighed, and commonly his energies are directed to producing convincing proof of his insanity. He is often noisy, or will fling himself about the room in an extravagant

frenzy, when visited by strangers; and yet when alone he is quiet and well-behaved. This over-acting is very characteristic of the malingerer; he finds the strain of simulating insanity a severe one, and accordingly prefers to use his powers when visitors are present rather than when alone.

Another marked distinction between true and feigned insanity is that the truly insane are consistent; while the sane feigning insanity are more commonly inconsistent. The sane man has to be constantly adapting himself to his surroundings, which are for ever changing. He says that he will do something, but does the reverse, because he finds that circumstances have altered. An insane person is more consistent than this; and if he decides to do a certain thing, he will usually carry it through in spite of its proving disagreeable or distressing.

Convictions are often stronger in the mentally unstable; for the sounder mind is constantly weighing considerations for and against the advisability of any particular act, and is more ready to abandon a previously declared determination. This question of consistency is important when examining a person for feigned insanity. The conduct of the insane is usually in keeping with their conversation. If a man truly insane talks extravagantly, his conduct is correspondingly prodigal; or if his speech is the expression of melancholic thoughts, his attitudes will reflect the depression of his mind.

It happens sometimes in cases of real insanity that the patient is far more insane in his actions than in his conversation, for he may be guarded in the latter. With the malingerer the reverse is not uncommonly observed, for the man who feigns disease at times forgets that he is acting a part, or, in giving great attention to that phase of the part which lies in speech, loses sight of the phase which lies in conduct, and so betrays himself. When a man refuses to speak, information as to his true mental state can only be derived from a study of his behaviour. We know the diseases in which mutism occurs, and we must examine the individual for the symptoms common to these maladies. If the refusal to speak appears to be due to some delusion, it may become necessary to place the patient under constant observation for

some time. Under such supervision he may be caught in an unwary mood, or he may become weary of his self-inflicted task.

A clumsy actor may assume too profound weak-mindedness, and with care his deceit may be discovered. Test the malingerer by some simple method, such as inviting him to name coins or some common articles of daily use. He may, from excess of caution and in the fear of showing sanity by correct answers, name the objects wrongly. A truly insane person would either be insulted or smile when requested to do such a childish thing, and would probably ask you if you took him for a fool; nevertheless he would answer correctly. Sleeplessness is a symptom which cannot be simulated for long; the malingerer may keep himself awake for a night or two, but sooner or later he is overcome by the exhaustion of his self-imposed effort, and sleeps soundly. Now in nearly all forms of acute insanity insomnia is a prominent symptom, and a certain amount of suspicion may fairly be entertained where sound sleep accompanies a recent development of apparently acute mental disturbance. This mistrust would be accentuated if supported by any other inconsistent phenomena.

Delusions might be supposed to be easily simulated, but this is by no means the case. Many of the truly insane are very reticent about their beliefs and disbeliefs, and it is often only by observation of their eccentric conduct that their ideas can be discovered. The insane man declares himself in a hundred little ways, but always has an explanation ready for any criticism of his actions, and will at once stoutly deny any suggestion that his mind is unhinged. The malingerer frequently limits himself to one or two delusions which he constantly harps upon, but he will often prove himself a cheat in that his actions are not always in keeping with his expressed beliefs. Hallucinations and illusions should be tested, and although the reality of them may be difficult to disprove, nevertheless it may be possible to discover the fraud. Some authorities lay stress on a peculiar attentive watchfulness which they consider to be a characteristic of the malingerer; but care must be taken not to confound such a symptom with the guarded manner of a genuinely insane person in the presence of strangers.

With regard to the forms of mental disorder chosen by

impostors, they will be found to be very varied. True melancholia develops gradually, the symptoms always being more marked in the early morning; further, the physical health suffers, and the patient is sleepless. Altogether the condition is not an easy one to feign with any degree of success. Simple melancholia and the sub-acute types of depression could be simulated more easily, but they are seldom chosen, as the malingerer fears that with so mild a mental disturbance he would not be deemed to be insane. No one but the boldest or most unskilled of impostors would dare to choose acute mania for his deception. The malingerer fails at the very outset, as incoherence is beyond his powers. The acute maniac is continually on the move day and night; he rarely sleeps; he is capricious with his food. The impostor mostly over-acts his part when in the presence of others, and under-acts it when alone; after a few hours of feigned excitement he wearies and sleeps. He further differs from the truly maniacal person in that it is usually impossible to get his attention even for one brief moment.

Some persons select delusional insanity for their fraud. Here the physician must remember that delusional states are usually of slow development; step by step the patient weaves his story; and in the early weeks of the disorder his want of mental balance is commonly shown by his erratic conduct rather than by his extravagant conversation. The man believes that he is the victim of some conspiracy, and is for ever watching for some corroborative evidence to support his belief; in a thousand ways he shows his suspicions, and yet rarely, if ever, expresses his thoughts in words. The impostor will develop an organised delusion in a day, and will exhaust his hearers by constantly repeating in almost the same words his false beliefs. The malingerer fails to keep his actions always in harmony with his supposed delusions, and his want of consistency is very helpful in exposing the imposture.

Profound dementia is another form of insanity that is sometimes chosen, but in this again the malingerer very readily falls into an evident error. He is apt to assume a sudden mental enfeeblement of a very advanced type. Now, we know that dementia usually runs a steady progressive course; gradually over an extended period of months mental

dissolution takes place ; the attributes of later development fail, and are followed in time by those which are more organised. Dementia is nearly always secondary to some acute attack of mental disease, except in such instances as alcoholism or senility, and even then its course is not a rapid one.

In conclusion, we should add that in all cases of doubt the individual should be placed under constant supervision, and a careful record of his conduct should be kept both by day and night. Avoid forming too rapid a judgment, as a great injustice may be done by too readily concluding that a man is an impostor. The unskilled malingerer is easily detected. His ideas of insanity are crude, and resemble the insanity so commonly depicted on the stage, which has the sanction rather of tradition than of truth. The expert impostor is the man who gives the physician the real difficulty ; but his deception is not unfathomable, and thoroughness and watchfulness will slowly but surely expose the fraud. It takes time, but the malingerer will lose confidence in himself when once he sees that he is playing a losing game.

Treatment.—The treatment of malingering calls for many of the highest qualities with which a physician can be gifted. To begin with, the patient must have no idea of the suspicions of his medical attendant, and no suggestion of the possibility of fraud should be confided to the nurse. To tell her that you believe the man to be a malingerer is one of the surest ways of defeating the end in view. Carefully give your instructions as to the symptoms you require to be watched, and note down any information that the nurse may volunteer ; but receive everything without comment. When the patient converses with you, keep an impassive expression and manner. After a time a casual suggestion in his presence as to your surprise at the absence of certain symptoms, may induce him to add them to those which he has already assumed. A quiet acknowledgment of such additions may encourage him to accept from time to time any other suggestions that you may choose to make. When you have definitely concluded that you are dealing with an impostor, it is frequently wise to let the patient see that you fully realise the true condition. Rigid treatment with exceptionally plain diet not uncommonly tends to bring about a rapid recovery.

CHAPTER XXI

THE RELATIONSHIP OF INSANITY WITH LAW

This subject is not only of intense interest to medical men, but is of no small importance to those who are connected with the administration of the law. The responsibilities of the insane, whether they be civil or criminal, are a matter of much concern to the community at large. The question of how far an insane person can be held responsible for a crime is a question which has constantly to be decided in our courts of justice. We must not forget that in some cases of mental disease, where disorders of conduct are the chief characteristic, the dividing line between insanity and crime is by no means easy to detect. Perhaps there is the greatest difficulty in those cases of moral insanity in which the mental aberration is shown by inability on the part of the individual to conform to the moral code of laws laid down by society; in such cases the line of demarcation between responsibility and disease becomes very fine indeed. It is in dealing with these borderland cases of insanity that the medical and legal professions have so many disagreements.

The legal and medical sciences are antipathetic in two essential respects, their objects and their natures. The good of society is the first object of the law; its nature is to be definite. The good of the individual is the first object of medicine; its nature, as with all progressive sciences, is to be tentative. Incidentally the medical science benefits society, but it does so through the individual. Incidentally law benefits an individual by conferring upon him the advantage of security. It is in attaining their primary objects that both law and medicine may err; law by unduly punishing the individual for the general good, medicine by fostering the individual claim at the expense of society as a whole. To a lawyer, society has claims so paramount as to demand recog-

nition even at the cost of wrong to the individual. To the medical practitioner the advantage to society is obscured by his lively appreciation that wrong is being done to his patient who is his first concern.

The difference in the nature of the two sciences is not less marked. Law is not and cannot usefully be too elastic. It is of social urgency that the responsibility of the individual should be well defined. Precision is uppermost in the mind of those who make and of those who administer the law. Medical science is essentially progressive, and shrinks from positive assertion. The accepted medical truth of yesterday is perhaps doubted to-day, and may be denounced as a plain falsehood to-morrow. Experience has taught the exponent of the medical as of every progressive science, the lesson of caution in assertion. He knows he is still learning, and he knows there are many things he has yet to learn. Especially must this be the case when he is dealing with questions so delicate as those which confront at every point one whose study is the brain, the nervous system, and their disorders.

It is these cardinal differences that bring the professions of law and medicine into conflict. The lawyer must have his facts, and must discard evidence that does not lead to an irresistible inference of fact. The medical man frequently finds himself so placed that, while unable to assert that a thing is so, he dare not say that it is not so. The law says that there is a presumption that every man is sane, and that the burden of proving that he is not lies upon the person who alleges insanity. The physician appreciates what unstable inheritance or moral degeneration means, and founds his case upon it. It is too flimsy a fabric for the lawyer with a craving for irresistible inferences. The individual must suffer. The fault is, however, not all on one side. The physician knows that a man's constitution bears upon it the stamp of his forefathers, and that, as Maudsley tersely puts it, he may 'suffer from the tyranny of his organisation.'

In approaching his cases the physician is therefore apt to take too generous a view of conduct, and to lend the weight of his opinion to support weak cases. Medical men have

frequently been charged, and no doubt rightly, with too readily defending persons charged with crime, on a plea of insanity, when the evidence has been meagre or insufficient. It is, however, fair to remind the lawyer, who is disposed to reject evidence as fanciful and fantastic, that it is not unnatural that a physician, whose life is devoted to mental science, should be able to detect mental aberration more readily than one without training or experience upon the subject. Men of known honour and repute do not appear as witnesses to support frivolous cases; and in forming an opinion as to whether a particular person is or is not responsible for his actions, men of equal integrity and skill may come to different conclusions, even as learned judges sometimes differ both on points of law and inferences of fact. Modern tendency seems to indicate a relaxation on the part of both the lawyer and the physician of their respective attitudes; the subject is of such supreme importance that one may express the hope that this tendency may continue.

Before passing from this digression from the relationship of law to insanity to the relationship of lawyer to physician, a few words might usefully be said upon the too lax manner in which some medical men are apt to give medical certificates in order to excuse their patient from duties which they would otherwise have to perform and which they desire to evade. The physician has not only the welfare of his patient in his keeping, but he has also his duties to his profession and to society, for these two latter have entrusted him with great responsibilities. A medical certificate the purport of which is to excuse a man from performing some duty should not be made except in *bonâ fide* cases, and the contents of that certificate should be absolutely true in fact, and not based on some flimsy excuse. Can it be possible that this ready granting of medical certificates in doubtful cases has led the lawyer to distrust in some instances the value of the evidence of medical men?

There is another point to which we should like to refer, and that is the test of insanity that is still from time to time used in our courts of justice, as to whether a person knows the difference between right and wrong. The knowledge of right and wrong referred to is knowledge of moral and legal

right and wrong. Some judges have now discarded this obsolete and useless test, but instances from time to time occur in which it is still applied. Never was there devised a more ill-conceived test than the test of sanity by the presence or absence of a knowledge of the difference between right and wrong. How could our great asylums be administered if the majority of the patients were ignorant of this fundamental law? It may unhesitatingly be said that if this test were applied to decide the legality of the detention of those at present in the asylums of Great Britain, a very large percentage of the patients would have to be discharged as not 'insane.' Doubtless many of those suffering from mental disorders are incapable of distinguishing between 'right and wrong;' but, on the other hand, there are a great number of persons undoubtedly insane who know when they are doing wrong.

It must not be forgotten that many of the insane break the moral code not because they do not recognise their action as sinful, but because they are biassed by delusions or false beliefs. A patient will tell you that he knows he is wrong in taking his life, and yet he feels certain that as long as he lives he is a source of danger to those about him.

The more one analyses this test by the knowledge of the difference between right and wrong, the more extraordinary it seems that such knowledge could ever have been made the crucial distinction between sanity and insanity. It is largely a matter of education whether the attribute of moral discrimination is acquired at all, and there must be in the world a large number of clearly sane persons whose knowledge of the difference between right and wrong is of a very rudimentary nature.

Probably we get much nearer the truth when we say that the person is insane who gratifies the desires of the moment irrespective of all consequences. This definition is perhaps too wide, as it would include cases of crime under the influence of passion; but if it were necessary to pursue the matter to a conclusion, crimes of passion, whether of anger or lust, may in many cases be committed when the actor is momentarily insane. A person committing a crime may fully realise that he is doing wrong both morally and in the eyes of the

law, but either owing to lack of power of inhibition or impelled by some delusion he acts without care for the consequences. It has been said that a sane man is reasonably taken to 'intend all the consequences of his own act,' but an insane man may surely act in a similar manner, only he disregards the consequences when compared with the pleasure of performing some act. The reasonable and sane man no doubt carefully weighs his actions, and he will not compromise his future welfare and happiness by an action which will certainly ostracise him from society.

Mercier [1] has observations on this point which may be helpful to the reader: 'Vice is the sacrifice of the future to the present, but of the future of the vicious man only.' 'Wrong-doing is the sacrifice of others to self.' 'Wrong-doing connotes association with others; the existence of a community; of a social state.' 'What we have to ascertain is the distinction between vice which is vice only and vice which is the manifestation of insanity.' In dealing with the question of what constitutes vice, Mercier points out that among other things the following must be considered: '(1) The gravity of the difference between the benefit of the immediate indulgence and the benefit in the future which immediate indulgence will forfeit. (2) The proximity or remoteness of the advantage which is forfeited by immediate indulgence. (3) The certainty of the future disadvantage. (4) The magnitude of the difference between the benefit enjoyed and the benefit forfeited.'

He states that 'one way (strictly speaking, the only way) in which insanity is related to vice, is in the weakening, not of the perception of the difference between the benefit and the disadvantage of immediate indulgence, but of the power of giving effect to the perception when made; of the power of postponing the immediate gratification for the sake of future good.'

In deciding a question of insanity in a person accused of crime, it is well for the physician to investigate the mental condition of the patient apart from any consideration of the crime; in other words, to examine the case in the same way that he would approach any ordinary case. The family history should be carefully gone into, and a record made of any

[1] 'Vice, Crime, and Insanity,' Allbutt's *System of Medicine*, vol. viii.

instance of mental disorder or epilepsy in near relatives. The past history of the patient should be fully investigated, and an inquiry made into any attack of insanity or seizure of any kind. The question of epilepsy should always be borne in mind, as both the major and minor forms of this disorder are of great importance when dealing with crime. Petit mal is of special importance, in the first place because it is apt to be overlooked, and in the second because persons are especially liable to do automatic and unconscious acts immediately after an attack of minor epilepsy.

Former head-injuries ought also to be inquired about, and in the event of such a history being given, evidence should be taken as to whether the injury had been followed by any alteration of conduct or mental capacity. The general habits of life are of importance, and may be helpful in deciding the question of insanity. Any eccentricities should also be noted, and the length of time they have been observed. We have known of a number of cases where living a solitary life abroad, in some isolated part of Canada or Australia, has led to the development of suspicions and delusions of persecution. Long periods of ill health or sleeplessness are factors which must not be forgotten, insomnia being very prone to induce mental aberration.

It is not intended in this chapter to describe how cases of mental disorder should be investigated, as this will be treated elsewhere, but merely to emphasise points of special importance. Further, it is necessary to consider the crime and how it was done, remembering to inquire into what appeared to be the mental state of the individual immediately before and after the event. Note the assigned cause of the crime. In many cases the cause is clearly a delusion, or no cause is given, as the person merely acted on impulse. The question of motive is apt to be misleading, and it is by no means uncommon for an insane person to give a motive which *primâ facie* may appear to indicate sanity, and yet on careful investigation will prove to be based on some delusion. Homicide or acts of violence may be done in obedience to 'voices' or auditory hallucinations, or may be the result of delusions of persecution in which the patient believes that he is the victim of some plot or conspiracy.

On the other hand, some slight imaginary insult, such as a sneer or cough, the creation of a distorted and hyper-sensitive mind, may be the determining factor in bringing about some violent assault, which the patient considers a legitimate retaliation for his wrongs. Outrage may be the product of an insane vanity which has been developing for months or years. There are many cases in which the violence seems to be absolutely wanton and without motive; and imbecile and weak-minded individuals frequently act in this way.

Another point to which we would draw attention is that certain insane persons, when they have just done some deed, are apparently perfectly sane and reasonable. It is also commonly observed in cases of attempted suicide, that after the attempt the patient seems to have recovered. In both instances the explanation is probably due either to shock, or perhaps more commonly to the feeling of enormous relief experienced by a person after the committal of an act the impulse to which may have been haunting him for days and weeks. Such cases should be placed under careful observation for some time, and even if no mental aberration is noted, it in no way justifies the conclusion that the person was not insane at the time the act of violence was committed. It is especially incumbent on the physician carefully to investigate these cases, and not to form a too rapid conclusion, otherwise a serious miscarriage of justice may result.

Further, it must be remembered that there are a number of innocent persons who give themselves up to the police for some imaginary crime. There are always plenty of confused and depressed individuals who are looking about for something whereby they can explain their altered feelings, and when reading in the newspaper that some crime has been committed by some unknown person, they come to the conclusion that they must have done it, and accordingly surrender themselves to the police.

The relation of alcohol to crime is often a difficult one to decide, for intoxication *per se* is no excuse for any breach of the law. But alcohol may be associated with insanity, and in this case the mental disorder must be proved. In addition it must not be forgotten that an insane person may endeavour to nerve himself for some deed of violence by taking stimulants,

and that care must be taken that this is neither misconstrued into an act of sanity nor the crime attributed to drink.

In conclusion, the physician must always be on his guard against feigned insanity. The tests for this latter have been fully dealt with elsewhere. Remember that each case must be tried on its own merits, and that after all there is no standard of insanity, and no definition of insanity. Honestly examine every case, neither being led away by the entreaties of sorrow-stricken relatives, nor being biassed against the prisoner on account of the cruelty of the crime. Ignore public opinion; and avoid personal prejudice. You may hold strong views against capital punishment. This must not weigh with you, for the penalty is fixed by the State. Your duty is to give your opinion on the question of insanity; you have nothing to do with the verdict or sentence. Let your evidence be as free from technical words and phrases as possible. In the chapter on Moral Insanity we have referred to other breaches of the criminal law; but so long as the point at issue is that of insanity, the mode of procedure so far as investigation is concerned is similar to that just recited.

Before passing on to the Civil Liability of the Insane, this is a convenient place to state the various ways and times that the question of insanity in prisoners may arise. In the police court the magistrate has no power to deal with any question of insanity. If a *primâ facie* case of crime is shown, he must commit the prisoner for trial, no matter how insane the latter may show himself. Similarly a grand jury have no concern with any questions of mental disorder, and it is not until a true bill has been found against the prisoner, and he comes before the court to stand upon his trial, that any issue of insanity can be raised. When the accused is called upon to plead, the prisoner may stand mute. The jury may then be asked to decide whether the accused 'is mute of malice, or by the visitation of God.' Even if a prisoner pleads in the ordinary way the jury may be asked whether the prisoner in question is mentally fit to plead or not, or it may be worded differently and the question may be definitely asked 'whether he is sane or not.' In all the above instances, which may arise on 'arraignment' (or being asked to plead), if the jury find the prisoner insane, he is not tried, but is ordered to be detained

until 'his Majesty's pleasure shall be known,' a form of words which means that the prisoner is sent to a State asylum for insane criminals. There is a point here to be noted which is of importance, and that is, if an accused person is found insane 'on arraignment,' the question of whether he were insane at the time when the crime was committed is not dealt with.

Further, if a prisoner has pleaded in the usual way, and during the course of the trial he shows himself to be clearly mentally unfit to plead, the judge has power to discharge the jury. The question of a prisoner's sanity may be raised during the trial, and evidence taken as to his mental state at the time when the crime was committed. In the event of the jury finding the prisoner insane, he is ordered 'to be detained during his Majesty's pleasure.' In some cases the point of insanity is not raised during the trial, as the legal advisers hope 'on the merits of the case' to get a verdict of 'not guilty,' in which event the patient can be placed under care by his friends if his mental state is such that it requires treatment. If a prisoner has been found guilty and sentenced, the question of mental disorder can still be raised by application to the Home Secretary, who upon definite evidence being given, will institute an inquiry into the mental state of the prisoner. The plea of insanity is most commonly made by the defence, but the Crown (the prosecution) is, as a general rule, very careful to have the mental state of all prisoners, accused of serious crimes, investigated and reported upon by the prison medical officer or a physician especially appointed for the purpose.

We must now pass on to consider the Civil Liability of the Insane. This has largely to do with breach of contracts, or the obligations of an insane person for wrongs to other individuals. Those requiring information on the legal responsibilities of the insane will find the matter fully dealt with in a useful book entitled, 'The Insane and the Law,' compiled by Mr. Pitt-Lewis, Dr. Percy Smith, and Mr. Hawke. We quote the following from the section of the 'Liability of the Insane upon Contracts:'

'If a person of sound mind make a contract, and afterwards becomes insane, his supervening insanity, as a rule, does not excuse him from the performance of the contract

which he has made [see *Leake on Contracts*, page 503]. It, however, relieves him from liability to carry out a contract to marry [as to which see *Cannon* v. *Smalley* (1885)]; and it perhaps also excuses him from the performance of contracts to render personal services. . . . Even if an agent whose authority is apparently continuing, after his principal has become insane, enters into a contract in good faith with a person who is ignorant of the fact of the insanity, the insane person will be bound [see *Drew* v. *Nunn* (1879)].

'Accordingly, the implied authority to pledge her husband's credit for "necessaries" which a wife generally possesses, continues after the former has become insane [*Read* v. *Legard* (1851)]. An insane person, moreover, can during his insanity, like an infant, make a binding contract for what the law calls "necessaries," and this whether the insanity be known to the other party to the contract or not [see *Leake on Contracts*, third edition, page 505; and the long series of cases from *Baxter* v. *Earl of Portsmouth*, in the year 1826, down to *re Rhodes* in 1890].' With regard to the term 'necessaries' this will largely be dependent upon social position and general circumstances. 'As a general rule, however, a person who is in a state of such insanity as disables him from making it, is not bound by any contract into which he may enter, while in that condition, with another person, *who is aware that he is then insane* [*Molton* v. *Camroux* (1848); *Imperial Loan Company* v. *Stone* (1892)].'

It is by no means always easy to prove that the other contracting party was aware that the man with whom he was dealing was insane. The conduct and general behaviour of the alleged insane person have largely to be relied upon in deciding whether any mental disorder must be deemed to have been apparent to the other party to the transaction. In the case of contracts, if a man is drunk at the time when a contract is entered into, and his state of intoxication is known to the other party, the drunkard is in the same position as an insane person. A contract made under such circumstances is not actually void, but is voidable at the instance of the insane or incompetent party, with whom rests the right of saying whether it shall stand good or not.

Continuing to quote from the same authority: 'A valid

marriage cannot be contracted by a person who is so insane as not to understand the nature of the act. An adequate degree of sanity is required for contracting a valid marriage, just as it is necessary to enable a person to make a valid will or to do other legal acts.

'The burden of showing that, at the time when the ceremony of marriage was gone through, one of the parties to such ceremony was so insane as not to be capable of understanding the nature of the contract, and the duties and responsibilities which it creates, rests upon any person who impeaches the marriage on the ground that insanity existed at the time that the ceremony was gone through [see *Durham* v. *Durham* (1885) and cases there cited]. But, when the existence of this degree of insanity is proved, the Divorce Court will, on a proper application being made to it for that purpose, declare the marriage null and void [*Scott* v. *Sebright* (1886)].' From this it will be noted that 'it is not every act of an insane person that is void, but only the act of every person who is so insane as not to be capable of understanding and appreciating that particular act.

'When a valid marriage has once been contracted, if one of the parties to it afterwards becomes insane this affords the other party no ground for obtaining a divorce.'

Dealing now with wrongs to others, apart from contracts, we find that 'an insane person is, in general, responsible for any wrong or injury to the person, character, or property of another which may be committed by him.' Messrs. Pitt-Lewis & Percy Smith, in 'The Insane and the Law,' state the case as follows: 'The law, in other words, looks to the damage done to the injured person, and not to the mind of the injurer; for it is impossible to "try the thought of man," or to find out what intention was existing in the mind of an aggressor at any given moment; and therefore the law holds that every man is, by law, taken to intend the natural and reasonable consequences which follow from any act of his, altogether irrespectively of the actual state of his mind at the moment he commits it.'

Bacon (*Abridgement, Trespass G*) laid down the law as follows: 'An action for trespass may be brought against a lunatic, notwithstanding he is incapable of design; for wher-

ever one person receives an injury from the voluntary act of another, this is trespass, though there was no desire to injure.' Apparently the law also holds an insane person responsible for any libel on another party. Nevertheless, it must be borne in mind that though a person of unsound mind may be held legally responsible for his actions in the matter of wrongs to others, the question of damages must not be forgotten. If a person is clearly insane, the probability is that the damages would be purely nominal.

Testamentary Capacity

The elements that are necessary to the competency of a testator at the time of making his will are—

(*a*) An understanding on the nature of the business on which he is engaged.

(*b*) A recollection of the property of which he means to dispose.

(*c*) A remembrance of the persons who have a claim to be the objects of his bounty, and a recognition of the relative strength of these claims.

(*d*) An appreciation of the manner in which he desires his property to devolve.

To deal first with heads (*a*) and (*d*), it will at least be conceded that a testator should understand that the document which he is executing purports to direct the disposition of his property on his death; and, further, that he should have a clear comprehension of the manner in which, and of the persons among whom, he desires that property to be divided.

As regards head (*b*), the expression used in the above statement is perhaps somewhat insufficient. The law does not require a detailed knowledge in the testator of items of his property, which would, in the absence of definite disposition, naturally fall into the residue of his estate. It requires only a fair estimate of the extent of his property, that the testator may not, on the one hand, by an unreasonable fear of his financial state, confine his bounty within unnatural limits, or, on the other hand, by an exalted appraisement of his riches, so lavishly divide it as to benefit neither friend nor charity.

Passing to head (*c*), the words of Erskine in the case of *Harwood* v. *Baker* (1840) (3 Moore's P.C. 282) emphasise the importance of this safeguard:

'The protection of the law is in no case more needed than in those where the mind has been too much enfeebled to comprehend more objects than one, and most especially when that one object may be so forced upon the attention of the invalid as to shut out all others that might require consideration.'

This brief account of the tests applied by the law to the physical and mental condition of a would-be testator, will show that the question of testamentary capacity or incapacity is one of fact. That sanity or insanity is a question of fact is equally true, but the words testamentary capacity or incapacity are advisedly used; for, as will presently appear, sanity and testamentary capacity are not necessarily equivalent terms. Where there is congenital idiocy, it is obvious that there can be no effective testamentary power. Take, however, the case of a patient suffering from delusional insanity who desires to make a will. Can he validly do so?

In such cases the view formerly taken in our courts of justice was that the mind is 'one and indivisible,' and that unsoundness in one particular involved unsoundness in the whole. The modern view has tended to a different test. The answer now depends on whether the delusions are of such a character as to warp the judgment of the testator in any of the respects comprised in the heads referred to above as (*a*) to (*d*).

This view is supported by Legrand in 'La Folie devant les Tribunaux,' where he contends that 'hallucinations are not sufficient obstacle to the power of making a will, if they have exercised no influence on the conduct of the testator, have not altered his natural affections, or perverted the fulfilment of his social and domestic duties; while, on the other hand, the will of a person affected by insane delusions ought not to be admitted if he has disinherited his family without cause, or looked on his relations as enemies, or accused them of seeking to poison him, or the like. In all such cases, where the delusion exercises a fatal influence on the acts of the person affected, the condition of the testa-

mentary power fails; the will of the party is no longer under the guidance of reason, it becomes the creature of the insane delusion.'

We will give illustrations of cases on each side of the line. To those considering their effect, a warning may be necessary against accepting too implicitly the statements made on either side. Evidence given which would seem clearly to establish insanity is not necessarily true, and may not be accepted by the court in coming to its decision. The tendency of the party propounding a will is, without conscious dishonesty, to view the testator's condition in the light most satisfactory to his contention.

Thus the beneficiary under the will may be expected to regard his selection as beneficiary as an unrefutable sign of the testator's sanity, while the exclusion of the party disputing the will seems to himself an equally cogent proof of insanity. So one may expect to find both a belittling and an exaggeration of eccentricity. This word of warning is important, and the critic whose opinion is based on newspaper reports should remember that a witness conveys more by his demeanour than his words, and that a jury, whether their verdict commends itself to the critic or not, must at least be admitted to have the best opportunity of forming a correct opinion.

In *Banks* v. *Goodfellow* (1870) (L.R. 5, Q.B. 549), it appeared that the testator made the will in dispute in 1863: he had been confined as a person of unsound mind for some months in 1841, and he remained to his death subject to delusions, that he was molested by a man who had long been dead, and that he was pursued by evil spirits, which he believed to be visibly present. As to the testator's general capacity to manage his affairs the evidence was contradictory; but the Court seemed to favour the opinion that his mental power was sufficient for this work. The jury found that the testator was capable of having such a knowledge and appreciation of facts, and was so far master of his intentions, and free from delusions, as would enable him to have a will of his own in the disposition of his property, and act upon it.

Cockburn (Chief Justice) set forth in very clear language the measure of the degree of mental power which should be insisted upon: 'If the human instincts and affections, or the

moral sense, become perverted by mental disease; if insane suspicion or aversion take the place of natural affections; if reason and judgment are lost, and the mind becomes a prey to insane delusions, calculated to interfere with and disturb its functions, and to lead to a testamentary disposition, due only to their baneful influence; in such a case it is obvious that the condition of testamentary power fails, and that a will made under such circumstances ought not to stand. But what if the mind, though possessing sufficient power, undisturbed by frenzy or delusion, to take into account all the considerations necessary to the proper making of a will, should be subject to some delusion, but such delusion neither exercises, nor is calculated to exercise, any influence on this particular disposition, and a rational and proper will is the result; ought we, in such a case, to deny to the testator the capacity of disposing of his property by will?'

It is to be observed that the delusions of the testator in this case were not of a sort to affect his bequest. The man to whom the testator attributed molestation had been long dead, and he was not a relative, and his children would not in any event have been natural objects of the testator's bounty. The hallucinations of sight and the persecution by evil spirits had no direct relation to the matter in dispute. No evidence was offered that any of the delusions alienated from the affections of the deceased any of his relations or friends, or injured his mind in such a way as to prevent his due consideration of the matters set out above.

In *Smee* v. *Smee* (1879) (5 P.D. 84) the deceased met with a severe railway accident in 1852, in consequence of which he resigned his appointment in the Bank of England in 1854. In the same year he was married. By a will in 1859 he left his property to his wife absolutely, subject only to some small legacies. By a will in 1867 he left her his property for life or widowhood, with remainder to the Brighton Corporation. The deceased managed his affairs to his death, took an active part in politics, and among other things wrote an able article on the repeal of the malt tax. His delusions were embodied in a memorial addressed to the Queen. Shortly, he thought that his supposed father was not his father; that he was connected with the Royal Family;

that his father drugged him; that he had a secret interview with the Duke of Wellington disguised as a mechanic; that the drugging obliterated temporarily his memory, which suddenly returned owing to the effusion of blood occasioned by the accident; that his brother had, by the fraud of his father, been put in possession of property which should have been his. The jury found that the deceased was not of sound mind when the wills were executed, and they were accordingly pronounced against. Here it will be noticed that the delusions from which the deceased suffered changed his feelings towards his father and brother, and made it impossible to say that the elements which went to make up testamentary capacity were all present.

In the case of *Roe* v. *Nix*, decided in 1892, we find a somewhat extreme illustration of the application of this branch of law. Miss Roe died, aged sixty-seven, leaving a document propounded as a valid will by one of the legatees. Under its provisions it appeared that she had slowly been becoming peculiar in her habits, and was in 1884 placed under inquisition. She was in various asylums, and ultimately went to the Holloway Sanatorium in 1890. She continued to be visited by the Lord Chancellor's Visitors in Lunacy. Evidence was given that on September 3, 1888, one of the visitors wrote, in reply to her, that she was quite capable of making a will. This expression must be admitted to be equivocal, as the making of a will and its validity when made cannot be said exactly to correspond. In 1888 and 1889 she made wills, for the preparation of which a solicitor was instructed. In September 1891, while at the Convalescent Home of the Holloway Sanatorium, she executed this will propounded. It was discussed between her brother and herself, and was in the handwriting of the testatrix. Under it the brother alone of her family received benefit. Some nurses and officials and the Medical Superintendent of the Sanatorium, and the lawyer who prepared the earlier wills, spoke favourably of the testamentary capacity of the deceased.

The jury found for all the wills, a finding which in law amounts to the establishment of the last. Thus we advance from the proposition, 'Was the testator sane or insane?' to a narrower proposition, 'Was the testator sane or insane *for*

the purpose of making a will?' Similar reasoning governs the decision of cases where the testator has been admittedly insane both before and after the execution of the testamentary act, and even where the patient was at the time of its execution under certificates, or a person of unsound mind so found by inquisition not superseded. And here the word 'insane' is used as importing what is known to lawyers as 'general insanity,' affecting the whole of the functions of the mind during its continuance, as distinguished from the 'partial insanity' of certain delusional states.

Lawyers have a term 'lucid interval,' which is stated to be the condition in the above-mentioned cases. By a 'lucid interval' they imply that a patient is in such a mental state as to be capable of transacting business or performing such acts as the making of wills. In every case in which testamentary capacity is challenged, the question to be determined is one of fact, and turns upon its own peculiar circumstances. No theory of law can be more elastic than this. That every case should be tried and decided on its own merits, unfettered by legalpresumption or doctrines, is surely the best and fairest of rules.

In truth, the whole law on this subject, when analysed, amounts to this: that testamentary capacity is a question of fact, not law. At this point, however, the defect creeps in. It is a defect in the constitution of the tribunal which sits to decide cases of this character. The duty of the presiding judge ends with an explanation of the rules set out above, and a summary of the facts which seem worthy of the consideration of the jury. The jury have then to decide whether the deceased was or was not possessed of testamentary capacity. The province of the jury is most difficult. They have to weigh evidence, on the one side and the other, contradictory to the last degree; they have to consider eccentricities and disorders of which they have no experience; and to pronounce upon fine questions of psychology which may have no answer. Whether insanity necessarily affects the whole mind, whether the mind is 'one and indivisible,' is a problem which has divided schools of mental science, and yet this problem is offered for solution to twelve gentlemen maybe free from all suspicion of scientific knowledge, dis-

tracted by conflicting evidence, unfamiliar alike with their surroundings and their subject. It may well be a matter for surprise that they perform the duties imposed upon them so creditably.

But it may also be doubted whether a more effectual tribunal might not be devised. To make a suggestion, would not a judge, assisted by two experts in mental diseases, as assessors, form a board more competent to deal with questions of so difficult a nature? The assessors would supply the knowledge of the special subject, so requisite in any tribunal; and the lawyer would keep the inquiry within bounds and direct its course. It seems strange that our courts should be granted the assistance of the Elder Brethren of Trinity House when a story of the sea is to be told; while the infinitely more obscure secrets of psychology should be offered to them for their unaided solution. This, however, is a defect due to the Legislature, and not to the administrative body of the law; such a change cannot be wrought by Bench or Bar; it must originate with Parliament.

To sum up, we cannot do better than to quote the following statements from Tuke's 'Dictionary of Psychological Medicine:'

'I. A testator must be able at the time when he makes his will both to recall and to keep clearly before his mind (*a*) the nature and extent of his property,[1] and (*b*) the persons who have claims upon his bounty; and his judgment and will must be sufficiently unclouded and free to enable him to determine the relative strength of these claims.

'II. An insane person can make a valid will if (*a*) in spite of his insanity he has a disposing memory, judgment, and will as defined above, or (*b*) he is enjoying what is called a "lucid interval" at the date of its execution.

'III. A "lucid interval" is not necessarily a complete restoration to mental vigour previously enjoyed; nor is it merely the cessation or suppression of the symptoms of insanity (*Dyce Sombre* v. *Prinseps*, 1856, per Sir John Dodson, 1 Deane, at p. 110): it is the recovery of testamentary memory, judgment, and will.

'IV. Neither subsequent suicide nor supervening insanity

[1] With regard to 'extent,' this is dealt with fully on p. 361.

will be reflected back upon previous eccentricities, so as to invalidate a will (cf. *Hoby* v. *Hoby*, 1828, per Sir John Nichol, 1 Hagg, 146; aliter in the case of previous insanity, *Symes* v. *Green*, 1859, 1 S. and T. 401).

'V. Upon the executor who propounds a will rests the burden of proving (*a*) testamentary capacity; (*b*) knowledge and approval of its contents, and (*c*) due execution. . . . A testatrix gave instructions for her will, which was prepared in accordance therewith. At the time of execution the testatrix merely recollected that she had given those instructions, but believed that the will which she was executing accurately embodied them. Sir James Hannen held that this will was valid (*Parkes* v. *Felgate*, 1883, 8 P. and D. 171, 173, 174). If the testatrix had merely authorised her solicitors to make a will, and had she said, "I do not know what you have put down, but I am quite prepared to execute it," the will would be invalid. (*Hastilow* v. *Stobie*, 1865, P. and D. 64; overruling dicta of Sir Creswell Creswell in (*a*) *Middlehurst* v. *Johnson*, 1860, 30 L.J. Prob. 14, and (*b*) *Cunliffe* v. *Crosse*, 1863, 3 S. and T. 36.)

'VI. *Prima facie*, an executor is justified in propounding his testator's will, and if the facts within his knowledge at the time he does so, tend to show eccentricity merely on the part of the testator, and he is totally ignorant at the time of the circumstances and conduct which afterwards induce a jury to find the testator was insane at the time of the will, he will, *on the principle that the testator's conduct was the cause of litigation*, be entitled to receive his costs out of the estate, although the will be pronounced against him (cf. *Broughton* v. *Knight Knight*, 1873, per Sir James Hannen, 3 P. and D. pp. 77–80, and *Smee* v. *Smee*, 1875, 5 P. and D. at p. 90).'

With regard to this latter paragraph, each case must rest on its own merits, as clearly what one person might consider as definite indication of insanity, and of insanity of such a nature as to interfere with sound testamentary capacity, another person might overlook or treat as eccentricity. From what we have stated, the physician will understand how important it is to take full notes at the time when called in to examine the mental state of a person who is about to execute

a will. Trust nothing to the memory, as it may be months or years before your evidence is required. Always observe a person carefully to see that he is in no way under the influence of alcohol or any other drug. See the patient alone, except with the nurse or attendant, and carefully note whether he appears to be controlled or influenced by any person or persons. Inquire as to his bearing and friendliness towards his relatives. If possible, learn whether the individual in question has ever previously executed a will, and if so, in what ways it differs from the proposed will. Inquire how long he has thought of disposing of his property in the manner suggested, and if there is any sudden cancelling of former recipients from the benefits of the will; learn, if possible, the cause of the change.

It must always be remembered that whatever is given in confidence to a medical man is a professional secret, but some information is of vast importance, and may prove invaluable if the will is contested. Information given before an actual suit is commenced, and especially if given years before a disagreement, always carries more weight with it than information given after an action has been started, for then it may savour of being an afterthought.

Carefully test the memory both for recent and remote events, and let your examination be thorough, as the question of memory may be an important one. Observe whether any delusion is expressed, and if so, the nature of the false belief, whether it is likely to have any definite bearing on the act about to be performed. Remember that an individual may have an excellent memory for remote events, for this memory is more organised, and yet recent memory may be very defective. This is especially the case in senility and certain forms of mental disorder. Failure of recent memory may seriously interfere with the testamentary capacity. Aphasia frequently renders a person incapable of making a will, for many of these patients are, in addition, unable to write, and therefore, for obvious reasons, it is difficult to make out what their wishes are for the purposes of drawing up a will.

If possible, see the patient more than once, and observe whether he expresses the same intentions for disposing of his property on both occasions. In case of doubt as to the mental

state of the testator, call in a colleague, as too much care cannot be taken in view of the will being contested at some subsequent time. Bear in mind what has been already stated, that the question of testamentary capacity is largely one of facts, and the more facts a physician is able to collect, the easier will it be for the jury to decide whether the testator was possessed of a 'disposing memory, judgment, and will.'

CHAPTER XXII

SLEEPLESSNESS

The subject of sleep and its disorders is of such importance as to merit a separate chapter for its consideration. The faculty of being able to sleep soundly is one of the greatest privileges of which a man can be possessed. While asleep, the weary man is oblivious of his cares, and the over-anxious man forgets his worries. After healthy sleep mind and body are alike refreshed; the sense of fatigue has disappeared, and the capacity for work is renewed. Without sleep life becomes a burden; the nights are spent wearily tossing about, and the day dawns to find mental and physical vigour rather lessened than renewed.

The living organism which cannot sleep must die; and slowly but surely the dissolution advances. The man who never sleeps steadily degenerates; his muscles will no longer perform delicate movements, and his mental powers diminish. Attention fails, and the power of thought disappears. At first it is all the higher attributes that are affected, but as time passes the disorder spreads to the lower functions. The appetite is lost, and food is no longer assimilated. The functions of the various organs are no longer properly carried out, and the physical health suffers. Insomnia first maims, then kills. At first the finest and most highly differentiated systems become disorganised, for these are the weakest links in the chain; thus reason is early in jeopardy. It may take years of sleeplessness, unless the insomnia is very profound, before life itself is threatened; but as the wearing-down process continues, the day must come when every organ of the body suffers from the want of rest and becomes disorganised.

The importance of obtaining proper sleep is not fully realised by the average man. He fails to grasp the part that sleep plays in the economy of the organism, and too readily neglects to study its requirements. Sleep is a habit, and a

habit which should be jealously maintained. As in the case of meals, it should be taken at a regular time ; otherwise the appetite may be lost with the waiting. Life is to-day so artificial that nights are often turned into days, without a thought that the habit formed in childhood of retiring to rest at a regular time is being disturbed. Once the habit of going to sleep at a certain hour is broken, there may be months of insomnia before it becomes re-established.

It is impossible and inappropriate to discuss here the various theories of sleep. The student must read this subject in some work of physiology. For convenience, however, some of the views held at the present time may be briefly enumerated :

(*a*) That sleep is due to a diminution in the blood supply to the brain, to an anæmic condition of the brain.

(*b*) That it is due to an expansion of the neuroglia cell processes.

(*c*) That it is due to contraction of the dendrons resulting in an interruption in the transmission of nervous impulses.

(*d*) That it is due to chemical changes in the brain cells arising from an accumulation of fatigue products.

The disorders of sleep are of several kinds. Sleep may be defective in quantity or quality, or in both these respects. The actual amount of sleep necessary for persons in health varies greatly, according to age, temperament, and soundness of sleep enjoyed. The young require much more sleep and rest than the aged ; the active disposition should have longer hours of repose than the apathetic and indolent. Children and young adults should always have nine or ten hours in bed, and even in middle life the number of hours allotted for sleep should not be under eight. The 'light' usually requires more rest than the 'heavy' sleeper, and persons whose sleep is constantly being broken by dreams should allow themselves longer time in bed. The aged usually take only five or six hours' sleep at night; but as they have a faculty of taking frequent naps during the day, they probably average about the same as the adult of middle life. The *amount* of sleep may be *excessive*. A person may spend ten or twelve hours, and even more, in bed, and, when up, may constantly be dropping off to sleep. The degenerate are frequently very

drowsy, and certain types of idiots and imbeciles spend a great portion of their time asleep. Again, towards the end of life, with senility, a great tendency to fall asleep at all times of the day may be observed. Persons suffering from organic brain disease usually become very somnolent; and the same symptom is very noticeable in other disorders, and is not uncommon in association with epilepsy. Conditions such as trance and catalepsy must not be confounded with sleep, as they are more closely allied to stuporose states.

The *amount* of sleep may be *defective* in quantity. Insomnia is one of the most urgent symptoms that we are called upon to treat in cases of mental disorder. The sleeplessness may be very marked, and the patient may lie awake night after night. Some persons drop off to sleep soon after retiring to bed, but wake again an hour or two after, and spend the rest of the night in wakefulness; others are restless on retiring to bed, and fail to get sleep until five or six o'clock in the morning.

The effects of insomnia vary in different individuals; one man will lie quietly in bed, in spite of not being able to sleep, while another will become fidgety and restless, turning from side to side, and finally in desperation will get up and wander about the room or house. Clearly the effect is much more serious on the latter than upon the man who is placid and takes what rest he can get. A person may sleep, but the sleep may be very disturbed and of a restless character. Dreams may be vivid and terrifying, and cause the nights to be hours of torture rather than repose.

Sleep may be abnormal in other ways. Somnambulism is common in children and young adults whose parentage is of a neurotic type. The person may or may not have a recollection of his somnambulistic acts when he awakes, the memory being dependent upon the depth of sleep at the time of the sleep-walking. Talking during sleep is another abnormal symptom not infrequently encountered. Night terrors are not uncommon in children with a neuropathic heredity; they may see all kinds of imaginary objects, and beg to be taken away.

The causes of sleeplessness are numerous. German Seé has drawn up the following useful classification of types of insomnia: (*a*) Dolorous Insomnia; (*b*) Digestive; (*c*) Cardiac

and dyspnœal; (*d*) Cerebro-spinal, neurotic, General Paralysis of the Insane, Mania, &c.; (*e*) Psychic Insomnia (emotional and sensorial); (*f*) Insomnia due to physical and cerebral fatigue; (*g*) Genito-urinary Insomnia; (*h*) Febrile, infectious, autotoxic; (*i*) Toxic Insomnia (tea, coffee, &c.). Sleeplessness due to the above causes may be absolute or comparative, and the defects may be in quality as well as in quantity.

Treatment.—It is almost impossible to treat insomnia successfully unless the cause of the sleeplessness is known. To discover the real cause may be a matter of no small difficulty, but the wise physician will not treat the complaints of his patients in a haphazard manner, merely trusting to good fortune that the remedies he suggests may be beneficial in bringing about a good result. Hypnotics should not be resorted to until other treatment has failed, though it is to be feared that it is the remedy that is frequently tried first. You can paralyse the muscles, you can confuse the mind, you can 'make a desert and call it peace,' but this is not scientific treatment. Sleep is subtle in its workings, and cunning must be the physician who would induce it. The patient will say that he is sleepless, in the same way that he will report that he has a rash, but it is usually left to the medical attendant to say *why* he does not sleep.

Insomnia may be the sole symptom of which the patient complains, and the only reason for which he seeks advice. Such a case should be as thoroughly gone into as a case of obscure abdominal disease. Carefully inquire into his family history, his past history, including the various diseases from which he may have suffered; learn the habits of his life as to food, alcohol, work, exercise, clothing, &c.; test the various systems of his body; in other words, thoroughly examine the man.

Apart from actually treating the sleeplessness and its causes, it is necessary to carry out the treatment in such a way that the bad effects of the insomnia on the mental and physical health of the patient are lessened as much as possible. The man that is not sleeping properly should not attempt to do the same amount of work that he was wont to do when in normal health. The nervous system which gets but little rest cannot with impunity work so quickly or so long

as when it has time to recuperate, and this lack of power must be allowed for. Nothing is so harmful and dangerous to the mental health as work with a fatigued nervous system. It is under these circumstances that resort is often had to alcohol and other stimulants in an endeavour to flog the nervous system to do more work. Therefore be sure to impress on the patient the dangers of sleeplessness, and the importance of not overtaxing his strength.

Further, it is necessary for the man suffering from insomnia to eat well, taking extra food by night as well as day. If unable to sleep, light food, such as milk and biscuits, cocoa, &c., should be taken during the night. This will be of great assistance to the patient, for it frequently induces sleep; and even if he remain wakeful, he will avert that sense of faintness and feeling of exhaustion which so commonly supervene after a sleepless night. As has already been pointed out, the first matter to be dealt with in the treatment of sleeplessness is the regulation of the life and habits of the patient, and the following details must be considered.

Bedroom, Clothing, &c.—The bedroom should be airy and well ventilated, the temperature of the room being regulated so that it is neither too hot in summer nor too cold in winter. The window should always be open. The room should be situated in a quiet part of the house and away from the noise of any traffic. Remove all clocks, and wedge any windows that may rattle. The mattress and pillows should be firm; feather beds should be avoided. The bed-clothes should not be too heavy, and must be carefully regulated according to the season of the year. Excess of either warmth or cold will interfere with sleep. The night apparel should be very light. No tight-fitting under-garments should be worn; in fact, vests are not required at night. If the patient suffers from cold feet, the bed should be previously warmed by a hot bottle, but this should be removed before going to sleep. There should be no light in the room if this can be avoided. This is one of the difficulties in the case of very suicidal patients, for here it is necessary for the nurse to be able to see her charge. Under these circumstances, lights should be shaded as much as possible, and they should never be turned up suddenly.

Diet.—The diet should be of a light and nourishing nature. Meals must be taken at regular intervals. The amount of meat must be limited in quantity; the average person eats too much nitrogenous food stuff. The drinking of milk should be encouraged, and a tumbler of milk taken every morning between breakfast and luncheon. The rule that must be laid down is that the more profound the insomnia the greater the amount of food taken. Nourishment must be taken during the night. This alone may induce sleep and cure the insomnia. Some persons require food just prior to retiring to bed; others sleep better if the meal is taken an hour or two earlier. A hot cup of gruel or bread and milk taken in bed is frequently very helpful in producing sleep.

A good deal may be learned regarding the natural laws of sleep by making a study of the subject in the lower animal world. Most animals prefer to take a very large meal, and then lay themselves down to sleep for many hours. Even man, with all his artificial habits, will be drowsy after a meal and will think less clearly than when hungry. A meal will make the hand less steady and the eye less keen. Watch a man playing a game where the finest muscular adjustments are necessary; it will be seen that after a meal the delicate co-ordination of eye and limb is not nearly so exact. If good work is required, it should be done midway between meals. When food is ingested the blood is required in the gastric area, the splanchnic vessels are dilated, and there must be a corresponding fall in the vascular supply to the brain.

Alcohol.—Some persons sleep better after excitants, others after depressants. A bottle of stout or glass of hot whisky and water just before retiring to rest will induce sleep in some, but increased wakefulness in others. The sleepless man is better without alcohol during the day, and it is wiser not to have recourse to it at night if sleep can be obtained by other means. It acts in a similar way to food, but more rapidly, and consequently its effect is more evanescent. Alcohol is a doubtful friend to a man with insomnia, and should be avoided if possible, as it is apt to bring other complications in its wake. Nevertheless, in some cases it is useful, and will sometimes relieve when everything else has failed; but such instances are the exception rather than the rule.

Tobacco.—There is little doubt that tobacco smoking when carried to excess may produce insomnia. Since excess is a relative term, and varies in different individuals, there is clearly no standard by which we can work. Cigarette smoking is a very seductive way of consuming tobacco, and is by no means an infrequent cause of sleeplessness. Tobacco smoking of all kinds must be regulated within reasonable limits.

Fatigue.—Mental or physical fatigue will readily produce insomnia. Probably everyone has endured the unpleasant experience of finding that upon retiring to bed after an exceptionally tiring day's work, he is too weary to sleep. This may be the nightly condition of some persons. Extreme fatigue of this kind must be actively treated, otherwise more serious symptoms will certainly follow. Whether the fatigue has been produced by prolonged mental or bodily exertion, the only remedy is to prevent its recurrence, for it is worse than useless to treat the insomnia by drugs and leave the cause uncorrected. A holiday should be taken until the sleep has returned; and after employment has again been started, the number of hours allotted to work and relaxation must be regulated. Another error that some persons make is to work late at night, and then immediately retire to rest with the brain in an excited condition. Such persons often express surprise that they cannot sleep. All forms of occupation, including games, such as chess and whist, for which concentrated attention is required, should cease at least an hour before bed-time.

Constipation.—Constipation is one of the most potent causes of sleeplessness. In some instances the mechanical pressure of an overloaded bowel upon the splanchnic vessels will seriously interfere with the blood-pressure of the general circulation, and thus disturb the blood supply in the brain. In other cases the constipation may produce a general auto-intoxication, and the poisons circulating in the blood bring about nutritional changes in the nerve-cells in the brain. Wherever constipation is a symptom associated with sleeplessness, a course of purgation is indicated.

Bladder.—Persons will sometimes awake in the early hours of the morning owing to the distended condition of their bladder. Having thus been aroused, they fail to get to

sleep again. In such cases the amount of fluid imbibed after six o'clock in the evening should be limited, for it will be found that these patients will frequently sleep on several hours longer if they are not disturbed.

Pain—Pyrexia.—Any local or general pain should be treated. Pyrexia very commonly produces sleeplessness; and as soon as the fever is reduced, the patient sleeps.

Baths.—Hydropathy is a very useful mode of treatment in some cases of insomnia. Some authorities recommend hot baths at bed-time. This may answer in some patients, but in others the effect produced is the reverse of that desired. After a hot bath there is a reaction, during which the vessels on the surface of the body are contracted; this must bring about a general rise of blood-pressure, which defeats the end in view. It is more physiologically correct to give a short cold bath before retiring to rest, for if the circulation is not too weak, most patients get a reaction when they get into bed. The capillaries on the surface of the body become distended, and the blood is thus drawn from the brain, with the result that a drowsy sensation is experienced. This effect can be enhanced by giving some warm food when the patient is in bed.

Fixed Hours for Bed-Time.—A point that must not be forgotten is to order the patient to retire to bed at a regular hour every night. Everything must be sacrificed so that this rule can be carried out; and no social duties should be permitted to interfere with it. Sleep is a habit, and when once the habit of going to sleep at a certain hour has been acquired, the custom should be kept up. The hour for bed should not be later than eleven p.m., and, if possible, half an hour earlier should be aimed at. Frequent naps during the day should be discouraged; in some cases a short siesta after the midday meal is helpful in procuring an appetite for sleep, but in others it will be found to interfere with obtaining sleep at night. In the latter case the patient should be told to rest for half an hour or an hour in the early afternoon, but not to go to sleep.

Hypnotism.—Hypnotic suggestion has been found to succeed in inducing sleep in some cases, where all other methods of treatment have failed. It should not be employed except by a qualified medical man.

Hypnotics.—The subject of hypnotics and their use is so large a one that it will be possible only briefly to review it. The drugs which are employed for the purpose of inducing sleep are very numerous, and space will only permit of reference to those which are in most common use. When it is deemed necessary to give an hypnotic, care should be exercised in making the selection, as drugs of this kind vary in suitability for any given case. First, consider the patient, whether he is young or old, robust or feeble, and whether he is suffering from any physical disease; secondly, as to the drug, decide whether the effect desired is to be an immediate one or whether its action is not required for some hours; and, finally, remember that some hypnotics act as stimulants, while others are depressants.

Whatever hypnotic is employed, it is not wise to continue its use too long. Its effect may wear off, and it will then act rather as an irritant without any corresponding benefit in producing sleep; or, if its use is allowed to become habitual, the patient may become entirely dependent upon the drug. So long as soporifics are being used, let several of them be alternated.

Another danger which must be avoided is the continued use of hypnotics after they have ceased to be necessary. A nightly potion is prescribed for a patient, and after he has been taking it for some time the fact is apt to be lost sight of, and the draught given as an act of routine. This is a mistake that ought not to occur, and frequent trials should be made to see how the patient sleeps without any artificial assistance. Some persons who have been taking sleeping draughts for many weeks lose all confidence in their ability to procure normal sleep, and if it is suggested that their hypnotic is to be stopped, they become very agitated and filled with a feeling of dread that they will not sleep. In these cases it is usually necessary to give a placebo, such as a few grains of sulphate of soda or a little aromatic tincture, and the patient will be found to sleep as well after taking this as he was doing when under the influence of a strong sedative.

In conclusion, never give a patient a prescription for a sleeping draught; many lives are yearly lost by the careless taking of narcotics. The timid sleeper only too readily forms

a habit of relying on some sedative for his nightly rest, and such a man must be protected from his own weakness. Hypnotics are a snare to some persons just as alcohol is to others, and the employment of them should be securely kept in the hands of the medical adviser.

Chloral Hydrate.—Chloral hydrate is one of the most valuable hypnotics we have, and it is perhaps not used as much as it might be. It is far preferable to sulphonal in every way, and is not so likely to give rise to disagreeable symptoms. Of course, care must be exercised in its use, as it is a powerful drug, and belongs to the class of cardiac depressants. It is contra-indicated in advanced cases of general paralysis of the insane, and in patients suffering from severe forms of heart disease. In all feeble persons it should be given in some stimulant. A mixture of chloral and bromide of potassium is almost better than mere chloral. It must not be forgotten that a chloral habit is somewhat rapidly formed, consequently it is necessary to change the draught from time to time, especially if the patient knows what drug he is taking. Chloral hydrate should not be administered until the patient is in bed.

Butyl-Chloral Hydrate.—Butyl-chloral hydrate acts in a similar way to chloral hydrate, but its action is less powerful and less certain, and it is of little use as an hypnotic in the treatment of mental disease.

Chloralamide.—Chloralamide is also a disappointing drug in the treatment of severe insomnia. In those cases where the sleeplessness is very profound chloralamide is practically useless, but in the milder cases its effect is often beneficial.

Bromide of Potassium.—In the earliest stage of sleeplessness, when the patient is just becoming restless, and is beginning to lose confidence in his power of sleep, bromide of potassium is a most valuable drug. Ten or fifteen grains given at bed-time has a most extraordinary effect, for it produces a sense of calm, and natural sleep usually quickly supervenes. On the other hand, in advanced cases where the insomnia is severe and of long standing bromide of potassium is practically useless when given alone, but when combined with chloral hydrate it makes a powerful narcotic.

Paraldehyde.—This drug has so pungent a taste and so

disagreeable an odour, that many patients will not take it. Nevertheless, it is a valuable hypnotic, and is almost more rapid in its action than any other narcotic. In many instances the first time a dose of two or three drachms of paraldehyde is administered, the patient will be found to fall asleep within two or three minutes. The writer has frequently used it in this way for producing anæsthesia during minor surgical operations.

Paraldehyde is a cardiac and respiratory stimulant, and is useful for feeble persons, but it has the disadvantage that it stimulates the secretions in the respiratory tubes, and may lead to a troublesome form of bronchitis. In very acute excitement paraldehyde can be given in doses of two and three drachms twice a day. The effect produced by the drug steadily diminishes, and for this reason it is useless to administer it for many nights in succession. Paraldehyde ought never to be given until the patient is in bed and ready for sleep. A paraldehyde habit has been known to be formed.

Amylene Hydrate.—Amylene hydrate is a very valuable hypnotic, as its action is certain, and it seldom, if ever, gives rise to any disagreeable symptoms. It is very useful in the treatment of insomnia in acute insanity. The only objection to the drug is that it is very costly, which circumstance somewhat limits its general use. As a narcotic it acts rapidly, and therefore should not be administered until the patient is in bed.

Sulphonal.—Sulphonal is probably one of the most frequently used hypnotics both in private practice and in institutions for the insane. It is a tasteless and odourless powder, and can for this reason be easily administered. Its action is slow but cumulative, and a single dose will frequently induce sleep for two nights in succession. Sulphonal should be given several hours before its effect is desired. The laity frequently take sulphonal under the impression that it is a harmless narcotic. This is far from being the case, and there is probably no hypnotic so prone to produce serious and disagreeable symptoms. Some persons may take this drug for a long time with impunity ; others will quickly show signs of sulphonal poisoning. The earlier toxic symptoms are weakness

of muscles, inco-ordination of gait and speech; words are slurred and articulation is indistinct. Vomiting is not uncommon, and it may be accompanied by diarrhœa or obstinate constipation. Within a short time the urine becomes of a port-wine colour. This colouration is due to hæmatoporphyrin, which is an iron-free derivative of hæmatin. It is present in a minute quantity in normal urine. In hæmatoporphyrinuria the pigment is found in large quantities, but the colouration of the urine is by no means entirely due to the hæmatoporphyrin, but to some other abnormal pigments. Hæmatoporphyrin gives a very characteristic spectrum. The urine has also the special quality that it decomposes very slowly. Hæmatoporphyrinuria is a very dangerous symptom, and many patients who have it die within a fortnight. Great care is necessary in the administration of sulphonal, and it should not be given continuously in large doses. The bowels of a patient taking sulphonal should be opened daily, and an aperient should be taken at regular intervals. Sulphonal dissolves very slowly, and in cases where the gastric secretions are diminished the liability to poisoning is greater. The best way to give sulphonal is in hot milk or arrowroot.

Trional.—Trional is very similar in its action to sulphonal, but it induces sleep more rapidly, and should not be given until an hour before bed-time. Trional is of most value in treating insomnia in the aged, but its employment will be found to be disappointing in younger individuals. The bad effects of trional are similar to those found in sulphonal, but they occur less frequently and are not so severe.

Veronal.—The hypnotic action of this drug is very uncertain, but is good in some cases, and acts fairly rapidly, usually within an hour of administration. It is useless in treating those patients whose insomnia is caused by pain. The dose varies from eight to fifteen grains, and the drug should be given in warm milk or tea.

Hyoscin and Hyoscyamin.—These drugs will be referred to in the general chapter on Treatment. They are useful in some cases, but care is required in their administration, and a patient should be in bed before the drug is given.

Opium, Morphia, &c.—Opium and its alkaloids are by no means useful as general hypnotics, neither is it proper to

employ them as such. There is no drug which conduces to forming a habit so readily as morphia, and it is more than an error of judgment for medical men to prescribe morphia for simple sleeplessness. For insomnia associated with insanity morphia is of little use, except in those cases where there is extreme physical weakness. For patients suffering from severe mental and bodily exhaustion its restorative powers are greater than those of any other drug.

Whatever hypnotic is employed, the patient or whoever is responsible for him must thoroughly understand that the taking of a soporific is only part of the treatment, and that it in no way lessens the importance of carrying out other instructions as to food and general management.

CHAPTER XXIII

CASE-TAKING

A book of this kind would not be complete without a few remarks on the subject of case-taking. There are many pitfalls into which the unwary may slip; and frequently it requires all the wit and acumen of a shrewd physician to meet the many difficulties which he will have to encounter at the hands of both the patient and his relatives. When first consulted the physician will frequently be told that the patient in question is not insane, but merely unmanageable. He will also be told that if the patient even suspects that his relatives think him insane very serious results will ensue.

A physician known to be specially versed in mental disorders may be asked to see the patient under an assumed name or under a false pretext. Never lend yourself to any such duplicity, for if once the patient finds you out in any untruthfulness your influence has gone, and he will never trust you again. The stratagems devised by the patient's friends are often clumsy and impracticable. Who having been introduced as a mining engineer or as a collector of coins can hope to engage successfully upon a minute inquiry into a patient's health? You may see him unintroduced and unannounced, but never, if it can be avoided, deceive him by false statements as to your identity.

It is not always possible to be absolutely truthful in a conversation with a patient, as, for instance, where he is known or believed to be in possession of firearms or other dangerous weapons; you may have to play the part of the man's friend and undertake to protect him from his enemies, until assistance is at hand and it is possible to search him and place him under care. Always be ready with a reply, for tact and quick wit will greatly assist in dealing with insane persons.

Reverting to the topic under discussion, it not uncommonly occurs that the opinions of relatives may be divided upon the question of the sanity or insanity of a patient; sometimes even active resistance on the part of individual relatives to the attendance of the physician may be encountered. In some doubtful cases of insanity the medical attendant may be entirely misled by accepting a version of the facts put before him by one faction. Remember that this is purely an *ex parte* statement, and that it is wise not to form a judgment too rapidly. If possible see the opposing relatives and discuss the case with them: let them see by your fairness that your mind is an open one, and that you have in no way prejudged the case. If they are still hostile and refuse all admittance, the question then becomes one of law. The Lunacy Act provides for certain of these difficulties, for if a man is alleged to be insane and is known not to be under proper care and control, an order can be obtained for visiting this patient. In most cases the obstinate relative can be persuaded to withdraw his opposition if sufficient firmness and tact are employed.

Ultimately, when you are ushered into the room in which the patient is, and in which there are in all probability other persons as well, care must be exercised not to address the wrong person. At times it is almost impossible to pick out the right man, as frequently the friends are more agitated than the patient. If possible, it is wise to learn what his general appearance is like, in order to avoid this difficulty. Always begin the inquiry by asking the patient about his physical health, and as openings occur ask questions more closely connected with his mental state. Many patients will at once discuss their delusions and give a full account of their depression or fears, but with others the conversation will have to be slowly brought round to the topic in which you are interested. Some individuals will refuse to answer any questions relating to their health. They will tell you that you are not their medical attendant, and that it is gross impertinence on your part to have forced your presence upon them. It may be necessary to tell the patient that you have come to inquire into his mental state, and that if he refuses to converse with you, you may have to come to the conclusion that he is insane

without hearing his views on the subject; and this may produce the desired effect.

The man with acute melancholia or acute mania is easily diagnosed; and the person who is very boastful and exalted, or confused and stuporose, is easily distinguishable. The greatest difficulty is experienced in dealing with purely delusional cases, where there is no apparent emotional disturbance, and where the patient is very much on his guard during the whole conversation. It may be necessary to see the man more than once before a decision can be arrived at. Remember that there are two distinct questions which have to be decided: (*a*) Is the person of unsound mind? (*b*) Is the man a proper subject to be deprived of his liberty and detained under care and treatment as a person of unsound mind? Many persons are of unsound mind and yet are quite fit to be at large: in such cases there is no reason why they should be deprived of their liberty. This topic is more fully discussed elsewhere.

During the conversation with the patient, observe anything extraordinary about the dress or ornaments worn; take note of the room and furniture, and notice any peculiarities. Some eccentricity about the attire or apartment may be the means of disclosing a delusion. Nothing is too trivial to note. Trifling evidence, when proved to be unimportant, can always be discarded, and sometimes details of seemingly small moment may prove of great value in forming a diagnosis. For the purpose of certification, delusions are important, but it must not be forgotten that they are rather a complication than a disease, that insanity may exist without them, and that it is necessary for many persons to be deprived of their liberty notwithstanding the fact that no delusion can be detected. For example, a man may be so depressed as to be intensely suicidal, and yet have no delusions; or the man with an exaggerated sense of well-being may be grossly extravagant and yet entertain no false ideas of wealth.

The reader will do well to study carefully the chapter on General Symptomatology, giving special attention to what has been said regarding delusions and hallucinations. False beliefs so largely depend on education, social status, and the

like, that care must be exercised in forming a judgment or too readily accepting statements as delusions.

Another point to be borne in mind is that the relatives of the patient will frequently contend that a particular belief is not a delusion, as it has a foundation in fact. But is not this true of most delusions? Delusions may be based on facts, and they may have a substratum of truth. The abnormality of the condition is that the truth is distorted—that the patient lays stress on some small portion of that truth, while totally ignoring other more important factors, and consequently arriving at an entirely erroneous conclusion, or at any rate a conclusion which is at variance with the inference that the majority of persons similarly situated would draw. Explain to such a mistaken relative that the presence or absence of delusions is of small consequence compared with the question of the general conduct of the patient.

Again, it is well to consider the relationship of the person who informs you of the delusions of any patient, and to observe the character and temperament of the informant. For example, is he timid and easily frightened; is he attaching undue importance to some trivial incident or expression? Is your informant a husband, who has long lost all affection for his wife, and whose very antipathy to the woman he once loved has so blinded him that he misconstrues all her actions into symptoms of insanity? Many churlish and selfish men are so brutal in their conduct to their wives and children, that it is scarcely to be wondered at that medical men are at times called in to examine the sanity of the man; and though the physician may conclude that what he sees and hears is more worthy of a degenerate dement than of a man in full possession of his mind, mere vicious degradation is not sufficient to justify a certificate of mental unsoundness.

Insanity is a relative term, each man is a standard for himself, and what would constitute insanity in one person fails to establish it in another. You may be asked in the courts of justice whether swearing or profane language is a proof of mental disorder. Like so many other symptoms, bad language *per se* does not indicate mental disorder; but when we hear some carefully nurtured girl or pious priest burst out into abusive and foul speech, this, taken with other symptoms,

may be an important indication of the mental state of that person. Never hesitate to question a patient regarding his delusions, or shrink from asking for an explanation of any eccentric conduct in which he may have been discovered. You may tell him that you do not necessarily believe all that you have heard about him, but that you are anxious to hear what explanation he has to give. Note whether the patient is incoherent or inclined to wander in his conversation, or whether he has any peculiar tricks, or is unduly fidgety and restless.

There is nothing that calls for greater power of observation than the clinical examination of an insane person. The patient who is constantly turning his head to one side is not uncommonly listening to auditory hallucinations; the man who takes some appreciable time before answering questions may be either unduly suspicious or generally confused. Test the memory, and, if it is deficient, find out how long it has been failing, and whether the amnesia is an obstacle to the patient's ability to look after himself and his affairs. Inquire from the relatives and the man himself whether there has been any change recently in the latter's habits, and if so for what reason. Remember that many insane persons will always offer some apparently plausible reason for their action, but when it is calmly considered it will be found to be flimsy and childish.

Refusal of food is an urgent symptom, and when it is present in any given case it behoves the medical attendant to investigate fully the reason why sufficient nourishment is not taken; and he must be on his guard against excuses unfounded in fact and merely designed to mislead.

A suicidal attempt is another point of great importance, and yet it is a symptom which does not always receive the consideration that it deserves. The man who has made an attempt at self-destruction is very likely to repeat the experiment, and his second attempt may be more successful. It has already been pointed out elsewhere that the man who has made a serious attempt on his life is frequently better for some time afterwards, and it is usually at this period that he is visited by the physician. If this is the case, give instructions for a careful watch to be kept over him day and night, and examine him again from time to time until you are convinced as to his true

mental state. Frequently a good deal of information can be derived from studying letters written by the patient. In these he may speak with greater freedom than in conversation, and it is well to ask for permission to see any recent correspondence. Some patients are so clearly insane that there is no difficulty in the diagnosis, while others require to be watched for a time, and visited more than once before a certificate can be signed.

Perhaps one of the greatest difficulties is to arrive at a proper decision in the case of feeble-minded and morally defective individuals. In these persons there is no former mental standard with which the present state can be compared; the man is not insane in relation to his former state. He is merely lacking in certain mental attributes which normally he ought to have acquired, and there is no definite period when the relations first became anxious regarding the mental condition of the patient. As a rule they very gradually come to the conclusion that the child or young adult is not quite what he should be intellectually. The physician called in to certify is in a similar difficulty. Although every person may have his conception of the capabilities of a normal mind, it is by no means easy to say at what point below that standard a person becomes so deficient as to be unfit to retain his liberty. The symptoms upon which a decision must rest are in such cases more negative than positive; it is a failure of evolution, not dissolution. There are usually no delusions or hallucinations.

On the other hand, there may be positive evidence of mental disorder in the exhibition of some vicious habits and degenerate tendencies; but as these are seldom shown during the visit of the physician, the latter is largely dependent for such data upon the statements of friends. Now the Lunacy Act of 1890 does not permit of a certificate being made merely on the evidence of others, and it is necessary for the medical attendant to be able to record definite symptoms of insanity, as observed by himself during the interview with the patient.

The past history of a patient should be thoroughly gone into, careful inquiry being made as to former illness or serious accidents. The physician will probably encounter no small

difficulty in gleaning a true family history, especially regarding mental disorder in the near relatives; but ultimately an approximately accurate history can as a rule be obtained by asking questions from various members of the family.

The next point to be considered is the question of certification, provided that after a full investigation it has been decided to place the patient under care. A patient may be removed under an urgency order and one medical certificate. The order is made by the nearest available relative. If no relative can be obtained, a friend may sign it, but the reason why no relative is acting must be stated. The patient must have been seen by this relative or friend within two days of the date of the order. All names must be written in full; no abbreviations are permitted. The statement of particulars is usually filled in by a relative, and it is better that it should be done by the person who signs the order. The urgency certificate is usually signed by the regular medical attendant. Fill in the full names and address, and in giving the latter state whether the residence is in a county such as London, Surrey, &c., or in a city or borough. Next state the occupation of the patient, and if the patient has no occupation, say so; do not leave a blank space, as this does not necessarily indicate no occupation, and moreover such omission is not accepted by the Commissioners in Lunacy.

The 'facts indicating insanity observed at the time of the examination' of the patient are the next to be entered, and these form the most important part of the certificate. In the first place, remember that what you write is in the form of an affidavit, and must be the absolute truth. Make your statements as short and concise as possible. Do not state that the patient has 'delusions' and 'hallucinations,' but record what these actually are. Some delusions are so clearly false beliefs that no comment is required, but with others it may be necessary to add a rider, such as, 'which I understand is a delusion.' Never burden your certificate with unnecessary matter, such as a record of physical symptoms, as, although of the utmost importance in diagnosis, these are useless in recording the mental state of an individual, and rather weaken than strengthen a certificate.

The second portion of the certificate, which is composed

of 'facts communicated by others,' need not be filled in when the facts observed by yourself are strong, but in instances where these are weak the certificate is greatly strengthened by being supported by the evidence of others. Be sure to give the name of the informant in full, and his description and address. In an urgency certificate there is an extra space provided in which to state the reasons why the case is being treated as an urgent one, and the necessity for immediate removal to an asylum. Refusal of food, marked tendency to suicide or violence, are among the most common reasons for employing urgency papers, and in all cases it is necessary for the physician to show that the patient is not under proper control, and that it is expedient in the interest of either the patient or the public that he should be forthwith placed under care.

A person may be detained under an urgency order for seven days from its date, provided that the patient was admitted into the institution within two days from the date of the examination by the medical man. While the urgency order is in force, the ordinary statutory papers must be completed. Urgency orders can only be used for private patients, the law being different in the case of paupers.

Next may be briefly described the ordinary statutory forms, which consist of: (*a*) Petition; (*b*) Statement of Particulars; (*c* and *d*) Medical Certificates; (*e*) Reception Order. These papers are absolutely necessary for all private patients, whether they have been previously certified under an urgency order or not. The petitioner, whenever possible, must be a relative, but if such is not available, a friend may act, but the reasons for his doing so must be stated. The petitioner must have seen the patient within fourteen days of the date of the *presentation of the petition* to a judicial authority. Care must be taken that no abbreviations are made, and that all names, addresses &c. are stated in full. The statement of particulars ought to be made by a relative, and usually the petitioner signs it. One of the medical certificates should be signed by the usual medical attendant of the patient, and if from any cause this is not practicable the petitioner has to state the reasons why it has not been done. When a patient has already been detained under an urgency order, the same medical man who

has signed the urgency certificate can give one of the ordinary certificates; in fact, he can copy word for word his previous certificate without again visiting the patient. He must, however, omit the special urgency clauses. The two medical certificates must be written on separate sheets of paper, and the physicians signing must examine the patient apart from each other. The date of the examination in both instances must not be more than seven clear days before the date of presentation of the petition to the judicial authority.

The following persons are disqualified from signing certificates: 'The petitioner; the person signing the urgency order; the superintendent, proprietor, or medical attendant of the asylum, hospital, or house; any persons interested in the payments or accounts of the lunatic; or the husband or the wife, father or father-in-law, mother or mother-in-law, son or son-in-law, daughter or daughter-in-law, brother or brother-in-law, sister or sister-in-law; partner or assistant of any of the foregoing persons.' Provision is made in the Lunacy Act of 1890 that persons signing medical certificates will not be liable to civil or criminal proceedings if they act in good faith and with reasonable care.

When the two certificates, the petition, and statement have been duly signed, it is then necessary to take these forms and present them to a judicial authority specially appointed under the Lunacy Act 1890, who will give a reception order. The judicial authorities are as follows: (*a*) stipendiary magistrates, (*b*) judges of county courts, and (*c*) justices specially appointed under the Lunacy Act 1890. The latter are appointed annually to serve for one year, and their names can always be obtained by applying to the clerk of the justices of the peace. It is not necessary to obtain the reception order from a judicial authority in the district in which the patient resides, though this is advisable when possible.

The judicial authority need not see the patient before he gives the order, as he can declare 'that he has not personally seen the patient before making the order.' When a patient has not been personally seen by the judicial authority before admission into an asylum, the medical officer of the asylum has to give the patient a form containing a 'notice of right' to a personal interview, or he must certify to the Com-

missioners in Lunacy that 'it would be prejudicial for the patient to be taken before or visited by a stipendiary magistrate, county court judge, or justice of the peace.' When a reception order has been given, the patient must be received into the asylum or house within seven clear days from the date of the order, otherwise the order expires; and it will then be necessary for all the papers (petition, statement, and two certificates) to be filled in afresh before a new reception order can be applied for.

In the case of pauper patients the law is different, and the simplest method of procedure is for the friends of the patient to inform the relieving officer of the district in which they live that they have a relative who is insane, and who is not under proper control. The relieving officer then, as a rule, removes the man to the workhouse infirmary, where he may reside for ten days under the supervision of the medical officer, and from there he is drafted into the county or borough asylum.

At times a difficulty arises in the case of a person in apparently good circumstances, as the relieving officer may state that the case is not proper for his interference. The law does not respect any such difference, and the Lunacy Act provides that 'every constable and relieving officer, and every overseer of a parish, who has knowledge that any person (whether a pauper or not) wandering at large within the district or parish of the constable, relieving officer, or overseer, is deemed to be a lunatic, shall immediately apprehend and take the alleged lunatic, or cause him to be apprehended and taken, before a justice.' 'Wandering at large' means not under proper care and control. The rich as well as the poor can be treated under this section, and, in point of practice, the above provision may be the only or the best way of securing a patient who is dangerous or difficult to find. The county asylum is for all grades of society if they desire to use it, and all that can be demanded is that the full rate for the support of the patient be paid. Clearly it is not proper to send a man with ample means to an infirmary or asylum where he will have to associate with paupers; but this is not a question for the relieving officer to decide. In rare instances it may be the most expedient way of taking temporary action.

The patient can be certified as a private patient at the infirmary, and removed thence to a hospital or licensed house, or even after removal to a county asylum he can be transferred to a more suitable place.

For the convenience of practitioners, the sections in the Lunacy Act dealing with 'Summary Reception Orders' are herewith given.

Summary Reception Orders. Lunacy Act 1890, Sects. 13–23

'13.—(1) Every constable, relieving officer, and overseer of a parish, who has knowledge that any person within the district or parish of the constable, relieving officer, or overseer, who is not a pauper and not wandering at large, is deemed to be a lunatic, and is not under proper care and control, or is cruelly treated or neglected by any relative or other person having the care or charge of him, shall within three days after obtaining such knowledge give information thereof upon oath to a justice being a judicial authority under this Act.

'(2) Any such justice upon the information on oath of any person whomsoever, that a person not a pauper, and not wandering at large, is deemed to be a lunatic and not under proper care and control, or is cruelly treated or neglected as aforesaid, may himself visit the alleged lunatic, and shall, whether making such visit or not, direct and authorise any two medical practitioners whom he thinks fit to visit and examine the alleged lunatic, and to certify their opinion as to his mental state, and the justice shall proceed in the same manner so far as possible, and have as to the alleged lunatic the same powers, as if a petition for a reception order had been presented by the person by whom the information with regard to the alleged lunatic has been sworn.

(3) 'If upon the certificates of the medical practitioners who examine the alleged lunatic, or after such other and further inquiry as the justice thinks necessary, he is satisfied that the alleged lunatic is a lunatic, and is not under proper care and control, or is cruelly treated or neglected by any relative or other person having the care or charge of him, and that he is a proper person to be taken charge of and detained under care and treatment, the justice may by order direct the lunatic to be received and detained in any institu-

tion for lunatics to which, if a pauper, he might be sent under this Act, and the constable, relieving officer, or overseer upon whose information the order has been made, or any constable whom the justice may require so to do, shall forthwith convey the lunatic to the institution named in the order.' [L.A. 1891, sect. 3.—A lunatic sent to an institution for lunatics under section 13 or 16 of the principal Act shall be classified as a pauper, until it is ascertained that he is entitled to be classified as a private patient.]

'14.—(1) Every medical officer of a union, who has knowledge that a pauper resident within the district of the officer is or is deemed to be a lunatic and a proper person to be sent to an asylum, shall, within three days after obtaining such knowledge, give notice thereof in writing to the relieving officer of the district, or if there is no such officer, to an overseer of the parish where the pauper resides.

'(2) Every relieving officer and every overseer of a parish of which there is no relieving officer, who respectively has knowledge, either by notice from a medical officer or otherwise, that any pauper resident within the district or parish of the relieving officer is deemed to be a lunatic, shall, within three days after obtaining such knowledge, give notice thereof to a justice having jurisdiction in the place where the pauper resides.

'(3) A justice, upon receiving such notice, shall by order require the relieving officer or overseer giving the notice, to bring the alleged lunatic before him or some other justice having jurisdiction in the place where the pauper resides, at such time and place within three days from the time of the notice to the justice as shall be appointed by the order.

'15.—(1) Every constable and relieving officer and every overseer of a parish who has knowledge that any person (whether a pauper or not) wandering at large within the district or parish of the constable, relieving officer, or overseer is deemed to be a lunatic, shall immediately apprehend and take the alleged lunatic, or cause him to be apprehended and taken, before a justice.

'(2) Any justice, upon the information upon oath of any person that a person wandering at large within the limits of his jurisdiction is deemed to be a lunatic, may by order require a constable, relieving officer, or overseer of the district or parish where the alleged lunatic is, to apprehend him and bring him before the justice making the order, or any justice having jurisdiction where the alleged lunatic is.

'16.—The justice before whom a pauper alleged to be a

lunatic or an alleged lunatic wandering at large is brought under this Act shall call in a medical practitioner, and shall examine the alleged lunatic, and make such inquiries as he thinks advisable, and if upon such examination or other proof the justice is satisfied in the first mentioned case that the alleged lunatic is a lunatic and a proper person to be detained, and, in the secondly mentioned case, that the alleged lunatic is a lunatic, and was wandering at large, and is a proper person to be detained, and if in each of the foregoing cases the medical practitioner who has been called in signs a medical certificate with regard to the lunatic, the justice may by order direct the lunatic to be received and detained in the institution for lunatics named in the order, and the relieving officer, overseer, or constable who brought the lunatic before the justice, or in the case of a lunatic wandering at large, any constable who may by the justice be required so to do, shall forthwith convey the lunatic to such institution.

'17.—Where, under this Act, notice has been given to, or an information upon oath laid before a justice that a pauper resident within the limits of his jurisdiction is deemed to be a lunatic, and a proper person to be sent to an asylum, or that a person, whether a pauper or not, wandering at large within the limits aforesaid, is deemed to be a lunatic, such justice may examine the alleged lunatic at his own house or elsewhere, and may proceed in all respects as if the alleged lunatic had been brought before him.

'18.—A justice shall not sign an order for the reception of a person as a pauper lunatic into an institution for lunatics or workhouse, unless he is satisfied that the alleged pauper is either in receipt of relief or in such circumstances as to require relief for his proper care. If it appears by the order that the justice is so satisfied, the lunatic shall be deemed to be a pauper chargeable to the union, county, or borough properly liable for his relief. A person, who is visited by the medical officer of the union, at the expense of the union, is, for the purposes of this section, to be deemed to be in receipt of relief.

'19.—(1) A justice making an order for the reception of a lunatic otherwise than upon petition, in this Act called a "summary reception order," may suspend the execution of the order for such period not exceeding fourteen days as he thinks fit, and in the meantime may give such directions or make such arrangements for the proper care and control of the lunatic as he considers proper.

'(2) If a medical practitioner who examines a lunatic as to

whom a summary reception order has been made, certifies in writing that the lunatic is not in a fit state to be removed, the removal shall be suspended until the same or some other medical practitioner certifies in writing that the lunatic is fit to be removed, and every medical practitioner who has certified that the lunatic is not in a fit state to be removed shall, as soon as in his judgment the lunatic is in a fit state to be removed, be bound to certify accordingly.

'20.—If a constable, relieving officer, or overseer is satisfied that it is necessary for the public safety or the welfare of an alleged lunatic with regard to whom it is his duty to take any proceedings under this Act, that the alleged lunatic should, before any such proceedings can be taken, be placed under care and control, the constable, relieving officer, or overseer may remove the alleged lunatic to the workhouse of the union in which the alleged lunatic is, and the master of the workhouse shall, unless there is no proper accommodation in the workhouse for the alleged lunatic, receive and relieve and detain the alleged lunatic therein, but no person shall be so detained for more than three days, and before the expiration of that time the constable, relieving officer, or overseer shall take such proceedings with regard to the alleged lunatic as are required by this Act.

'21.—(1) In any case where a summary reception order might be made, any justice, if satisfied that it is expedient for the welfare of the lunatic, or for the public safety, that the lunatic should forthwith be placed under care and control, and if it appears to him that there is proper accommodation for the lunatic in the workhouse of the union in which the lunatic is, may make an order for taking the lunatic to and receiving him in that workhouse.

'(2) In any case where a summary reception order has been made, an order under this section may be made to provide for the detention of the lunatic until he can be removed.

'(3) An order under this section shall not authorise the detention of a lunatic in a workhouse for more than fourteen days. After which period such detention shall not be lawful, except in accordance with the provisions of this Act as to the detention of lunatics in workhouses.

'(4) An order under this section may be made by any justice having jurisdiction in the place where the lunatic is.

'22.—In the case of a lunatic as to whom a summary reception order may be made, nothing in this Act shall prevent a relation or friend from retaining or taking the lunatic under his own care if a justice having jurisdiction to make

the order, or the visitors of the asylum in which the lunatic is, or is intended to be placed, shall be satisfied that proper care will be taken of the lunatic.

'[L.A. 1891, sect. 2.—(1) A constable, relieving officer, or overseer, whose duty it is, under the principal Act, to convey a lunatic to or from an institution for lunatics, may make proper arrangements for the performance of the duty by some other person or persons.

'(2) Where in a union there are two or more relieving officers, and the guardians, with the sanction of the Local Government Board, direct one relieving officer to discharge throughout the union the duties of a relieving officer, in respect of lunatics, every other relieving officer in the union shall inform the officer so directed of any case of a lunatic, with which it would otherwise devolve upon such other relieving officer to deal, and it shall be the duty of the relieving officer receiving such information to deal with the case, and the other relieving officer shall be discharged from any further duty in the matter.]

Reception Order by two Commissioners

'23.—(1) Any two or more Commissioners may visit a pauper lunatic or alleged lunatic not in an institution for lunatics, or workhouse, and may, if they think fit, call in a medical practitioner.

'(2) If the medical practitioner signs a medical certificate with regard to the lunatic, and the Commissioners are satisfied that the pauper is a lunatic, and a proper person to be detained, they may by order direct the lunatic to be received in an institution for lunatics, and the relieving officer of the district or any constable who may by them be required so to do shall forthwith convey the lunatic to such institution.'

In conclusion, the following scheme for the general examination of the patient may be found useful:

I. *Inquire concerning the life history of the patient.*

(*a*) Changes of climate and places of residence.

(*b*) Nature of work.

(*c*) Food and stimulants. Alcohol and other drugs.

(*d*) Marriage—number of children.

(*e*) Home comfort or privation.
(*f*) At what age did patient walk, speak, &c.
(*g*) Degree and character of education, and whether he was slow or quick at learning when a child.
(*h*) Character and temperament in childhood.
(*i*) Sleep; whether it has always been good, or whether defective or abnormal in any way (sleep-walking and sleep-talking).
(*k*) Special sense-defects, blind, deaf, &c.
(*l*) Defects of speech from childhood, stammering, &c.
(*m*) Sexual relation.

If a woman, inquire—

(*a*) First appearance and regularity of catamenia.
(*b*) If married, number and date of pregnancies, and whether any miscarriage; also health of children.

II. *Family history of blood relations only.*

Check the patient's statements by inquiring into chief symptoms of any disease that is reported.

(*a*) Insanity or definite mental peculiarities, including idiocy and imbecility.
(*b*) Epilepsy, both minor and major forms.
(*c*) Alcoholism.
(*d*) Drug habits.
(*e*) Phthisis.
(*f*) Diabetes.
(*g*) Gout, rheumatism, heart disease.
(*h*) Malignant disease.
(*i*) Syphilis.
(*k*) Asthma, stammering, hysteria, &c.

III. *Previous history regarding illnesses and accidents to the patient.*

(*a*) Convulsions in childhood or later.
(*b*) What diseases he has had, especially such as syphilis, signs of phthisis, diabetes, hysteria, previous attacks of mental disorder,

rheumatic fever, chronic dyspepsia, chronic constipation, &c.

(*c*) Sunstroke.

(*d*) Serious accidents, and whether loss of consciousness.

Take careful notes of the dates of any of the above.

IV. *Supposed or assigned cause of present illness.*

V. *Present illness.*

Note carefully the order of occurrence of symptoms, especially those which first arrested the friends' or patient's attention. Then inquire for any other symptoms that may have preceded these, but have passed unnoticed.

1. Physical condition. General appearance.

(*a*) Weight and nutrition.

(*b*) Expression and attitude.

(*c*) Stigmata of degeneration.

(*d*) Gastro-intestinal tract; refusal of food.

(*e*) Heart and vascular system.

(*f*) Respiratory system.

(*g*) Genito-urinary system; catamenia.

(*h*) Skin and appendages.

(*i*) Nervous system.

(1) Motor symptoms, paresis, paralysis or disordered movements, gait, convulsions.

(2) Sensory symptoms, hyperæsthesia, anæsthesia, analgesia, paræsthesia.

(3) Special sense sensations, disorders of sight, hearing, smell, taste, and field of vision.

(*k*) Pupillary changes.

(1) Size.

(2) Mobility.

(3) Inequality.

(4) Reflex adjustments { (*a*) Consensual reflexes. (*b*) Reflex-iridoplegia. (*c*) Sympathetic reflexes.

(5) Accommodative adjustments.

(*l*) Tendon reflexes. Knee-jerks, plus, minus, lost, or different on the two sides.
(*m*) Superficial reflexes.
(*n*) Speech disorders.
(*o*) Sleep.

2. Mental condition.

(*a*) Mood. Unduly excited, depressed, exalted, irritable, hostile, suspicious, quarrelsome, indolent, apathetic, emotional.
(*b*) Æsthetic sentiment. Disordered, untidy, unwashed, hair dishevelled, decorated.
(*c*) Attention. Easily distracted, inattention or hyper-attention.
(*d*) Conduct. Restless, eccentric, attends to calls of nature, dresses himself, noisy or abnormally quiet.
(*e*) Memory. Amnesia for recent or distant events, hypermnesia or paramnesia.
(*f*) Orientation. Is the patient capable of localising himself and objects and persons about him? Does he mistake identity?
(*g*) Mode of speech. Slow, accelerated, mute or incoherent.
(*h*) Judgment and reasoning power. Does he realise that he is ill, and how does he explain his illness?
(*i*) Occupation. Does he employ his time in doing reasonable things, or is he entirely unoccupied?
(*k*) Delusions.
(*l*) Imperative ideas.
(*m*) Hallucinations or illusions of any special sense.
(*n*) Suicidal.
(*o*) Homicidal.

The following are copies of an urgency medical certificate and an ordinary medical certificate:

Urgency Certificate.

53 Vict. c. 5.—Sched. 2, Form 8.

CERTIFICATE OF MEDICAL PRACTITIONER.

In the matter of .....

of (a) .....

in the (b) ..... of .....

(c) .....

an alleged lunatic.

I, the undersigned .....

do hereby certify as follows:

1. I am a person registered under the Medical Act 1858, and I am in the actual practice of the medical profession.

2. On the ..... day of ..... 190 ,

at (d) .....

in the (e) ..... of .....

I personally examined the said .....

and came to the conclusion that he is (f) .....

and a proper person to be taken charge of and detained under care and treatment.

3. I formed this conclusion on the following grounds, viz.:—

(a.) Facts indicating Insanity observed by myself at the time of examination (g), viz.: .....

.....

.....

.....

.....

(b.) Facts communicated by others (h), viz.: .....

.....

.....

.....

.....

(a) *Insert residence of patient.*

(b) County, city, *or* borough, *as the case may be.*

(c) *Insert profession or occupation, if any.*

(d) *Insert the place of examination, giving the name of the street, with number or name of house, or should there be no number, the Christian and surname of occupier.*

(e) County, city, *or* borough, *as the case may be.*

(f) A lunatic, an idiot, *or* a person of unsound mind.

(g) *If the same or other facts were observed previous to the time of the examination, the certifier is at liberty to subjoin them in a separate paragraph.*

(h) *The names and Christian names (if known) of informants to be given, with their addresses and descriptions.*

Lunacy, Nos. 8 & 9.

(53 Vict. c. 5, ss. 11, 28, 29, 32 & 33.)

53 VICT. c. 5.—FORM 9.

(*i*) *If an urgency certificate is required, it must be added here.—Form No. 9.*

[(*i*) STATEMENT ACCOMPANYING URGENCY ORDER.

I certify that it is expedient for the welfare of the said .....[*or* for the public safety, *as the case may be*] that the said ..... should be forthwith placed under care and treatment.

My reasons for this conclusion are as follows : .....

.....

.....

.....

.....

.....

.....]

4. The said ..... appeared to me to be [*or* not to be] in a fit condition of bodily health to be removed to an asylum, hospital, or licensed house. (*k*)

(*k*) *Strike out this clause in case of a private patient whose removal is not proposed.*

5. I give this certificate having first read the section of the Act of Parliament printed below.

Dated this ..... day of ..... One Thousand Nine Hundred and

(**Signed**) .....

of (*l*) .....

.....

(*l*) *Insert full postal address.*

Extract from section 317 *of the Lunacy Act* 1890.

Any person who makes a wilful misstatement of any material fact in any medical or other certificate, or in any statement or report of bodily or mental condition under this Act, shall be guilty of a misdemeanour.

53 Vict. c. 5.—Sched. D, Form 8.

CERTIFICATE OF MEDICAL PRACTITIONER.

In the matter of .....
of (*a*) .....
in the (*b*) .....
(*c*) .....
an alleged lunatic.

I, the undersigned, ...
do hereby certify as follows:

1. I am a person registered under the Medical Act 1858, and I am in the actual practice of the medical profession.

2. On the ..... day of 190
at (*d*) .....
in the (*e*) ..... of .....
(separately from any other practitioner) (*f*) I personally examined the said .....
and came to the conclusion that he is (*g*) .....
and a proper person to be taken charge of and detained under care and treatment.

3. I formed this conclusion on the following grounds, viz.:

(*a.*) Facts indicating Insanity observed by myself at the time of examination (*h*), viz.: .....
.....
.....

(*b.*) Facts communicated by others (*i*), viz. .....
.....
.....

4. The said .....
appeared to me to be* ..... in a fit condition of bodily health to be removed to an asylum, hospital, or licensed house. (*k*)

5. I give this certificate having first read the section of the Act of Parliament printed below.

(Signed) .....
of (*l*) .....

Dated this ..... day of 190

Any person who makes a wilful misstatement of any material fact in any medical or other certificate, or in any statement or report of bodily or mental condition under this Act, shall be guilty of a misdemeanour.—*Extract from section* 317 *of the Lunacy Act* 1890.

(*a*) *Insert residence of patient.*

(*b*) County, city, *or* borough, *as the case may be.*

(*c*) *Insert profession or occupation, if any.*

(*d*) *Insert the place of examination, giving the name of the street, with number or name of house, or should there be no number, the Christian and Surname of occupier.*

(*e*) County, city, *or* borough, *as the case may be.*

(*f*) *Omit this where only one certificate is required.*

(*g*) A lunatic, an idiot, *or* a person of unsound mind.

(*h*) *If the same or other facts were observed previous to the time of the examination, the certifier is at liberty to subjoin them in a separate paragraph.*

(*i*) *The names and Christian names (if known) of informants to be given, with their addresses and descriptions.*

* *Or* not to be.

(*k*) *Strike out this clause in case of a patient whose removal is not proposed.*

(*l*) *Insert full postal address.*

Lunacy 8.

(53 Vict. c. 5, ss. 4, 11, 16, 28, 29.)

CHAPTER XXIV

TREATMENT

In the opening sentence of the chapter on the treatment of mental disease, let us urge upon the student to approach this important subject in the same way that he would take up the study of physical disease. Insanity is one of the common ills of humanity. It is gratifying to be able to believe that public opinion has almost outgrown that era of ignorance in which the mentally afflicted were looked upon as lepers and outcasts, as beings whose disease and almost whose very names should be forgotten or mentioned only with bated breath.

Insanity is not a crime, unless all disease be deemed to be the natural sequel of primal sin, the blame for which may be justly attributed to the individual sufferers in succeeding generations. Insanity is no crime, but a grievous misfortune. Occasionally, without doubt, insanity is earned by a profligate and misspent life, an observation equally true of many other forms of disease. The majority of the insane are at least equally deserving of our compassion with the blind or the lame. It is painful enough to the patient to be deprived of the mental faculties enjoyed by the average man ; it is brutal in those so fortunate as to have escaped a like calamity to aggravate his suffering by want of kindly thought and charity. It is the physician's duty to guard his patient from the thoughtlessness of the world, to inspire for him a feeling of sympathy, and to correct the disposition of the ignorant to regard him as beyond the human pale. It is something consistently to deprecate and discourage the careless use of obsolete terms such as 'mad' and 'lunatic,' expressions which convey an entirely erroneous idea to the average mind, and are as misleading and meaningless as terms such as 'humours' and 'distempers' would be in the medical diction of to-day.

The first aim of the physician should be to encourage

early treatment, for there are many forms of mental disease which in their initial stages readily yield to prudent handling. To do this he must have the confidence of his patients and a knowledge of his art. With these preliminary observations, consideration may now be directed to the various elements which go to form what is comprehensively styled 'treatment.' Much nervous and mental disorder can be prevented by teaching the value of a wise and careful mode of life. Preventive medicine should be the medicine of the educated classes; and it is one of the duties of the physician to teach his patients how to regulate and attend to the various functions of the body.

Preventive Treatment.—The preventive treatment of mental disease covers a very large field of study. The various causes which tend to produce insanity should first be reviewed, and an effort then made to remove or so modify them as to render them inert. At the outset of such a task, gigantic in itself, this overwhelming difficulty presents itself, that that which is harmful to one person may be indifferent in its effect upon another or even beneficial to him. The personal equation or individual constitution frequently determines the effect of stresses upon the organism, and it is this peculiar idiosyncrasy that is so difficult to gauge.

It is not possible here to do more than take a broad review of the subject with special reference to those points which seem to call most forcibly for consideration. The object upon which aspiration should first centre, as touching the most fruitful source of the dissemination of mental disease, should be the prevention of propagation of insanity from generation to generation. This question is largely a social one, and little can be done until public opinion is ripe to receive direction, which is equivalent to saying until the problem has become so serious that it cannot be longer overlooked. Many of the insane are children of degenerate parents; and consequently, if the marriage of a man or a woman, who has been insane, epileptic or alcoholic, were made penal, or the contracting parties in some way made amenable to law, there would doubtless soon be a very appreciable fall in the number of fresh cases of mental disease.

The liberty of the subject is a fundamental doctrine in our

national creed. This liberty of the individual is, however, in any state of society subject to the good of the many. The liberty of the thief to steal, or the murderer to slay, has long since been denied him. That it is so is due to the general appreciation that it is better for the whole body that individual liberty in such respects should be curtailed. So soon as public opinion recognises that it is a social sin for the unfit to beget or bear children, who in turn pass on the taint in ever-widening progression, legislative interference may be expected.

We make salutary provisions to avoid the risk of infection of physical ills, which to a large extent are of a merely temporary nature, unaccompanied by permanent injury. To the mental side of disease, infinitely more insidious in its effects, infinitely more dangerous to descendants, and therefore infinitely more important from a national point of view, no heed is given. Something is being done—very little and with lamentably little profit—to protect the degenerate from his own weakness. Nothing is being done to protect society from the degenerate.

In the past there has been the excuse of ignorance. That plea is no longer permissible. The increase of scientific research and knowledge has made the facts plain for all who care to see.

We must await the advent of a statesman whom education and inquiry have convinced of a pressing national need, and who has the courage to undertake an unpopular task. The office of educating public opinion to a new understanding is never popular. The majority, unaffected by proposed provisions, are at most mildly interested in and quite apathetic about the new invasion. The minority, whose liberty to indulge its personal desires at the national expense is threatened, is tumultuously indignant. The reformer loses prestige and is defeated; the question is dropped until another true patriot steps into the breach. Ultimately the reform comes, but not before great damage has been done. Meanwhile voices will not be lacking indignantly to reiterate the invariable objections, Where will it end? Where are we to draw the line? The answer is simple; the most timid need not fear. Before any doubtful ground is reached, there is far

to go. Much may be done without passing a step from the safe platform of indisputable fact.

We have before us the example of countries which have slowly deteriorated, and have gradually slipped from the first to the second, and later from the second to the third grade in the scale of nations, largely because social evils have flourished unmolested, until degeneracy has gained the upper hand. Such has been the fate of countries in the days of darkness ; but are we to sink into the same obscurity for the like cause in these times of greater enlightenment: is the warning of the past to be of no avail? In England to-day the alcoholic enjoys the same privileges as the hard-working and self-respecting man ; and yet he is a burden to the State in his lifetime, and at his death he leaves degenerate offspring as a legacy to the nation.

In earlier chapters the claim has been advanced that the morally insane and other degenerates should be judged more leniently for their offences, but it is incumbent upon society to protect itself from the consequences of their ills. Space will not permit enlarging further on this important subject, and attention must now be directed to other means of preventing the development of mental disease.

In the chapter on the causation of insanity, emphasis has been laid upon the importance of the education of the young on rational lines. Similarly, the tendency in vogue at the present time to force the mental development and to encourage the brilliant child to work for scholarship examinations has been deprecated. Parents should be warned not to allow themselves to be flattered by teachers' praise of the intellectual abilities of their child, whose education they should jealously watch, and whose future they should guard from the danger of being sacrificed for the transient *kudos* of early distinction.

Children should be trained with a view to their future work in life ; by all means let their equipment be thorough, but do not allow their mental preparation to be pressed at the expense of their physical development. Slow and steady maturity connotes a higher degree of stability. When the period of puberty is reached the child should be carefully watched, and school work should be somewhat relaxed until

the peculiar stress of this epoch is passed. Physical exercise should be carefully regulated; much evil may result from constant or excessive bodily fatigue.

The body should be clothed on hygienic lines; the tendency is to wear too much. The skin requires free access to the air, and to cover it with materials which rapidly become saturated with the exudations from the body tends to produce disease. Persons who feel the cold will often heap on clothing, little realising that each additional article conduces to defeat the end they have in view. Thick underclothing warms the surface and brings about a dilatation of the capillaries in the skin; the blood is thereby cooled, and the sensation of cold is not lessened. If additional clothing is required, it should take the form of outer wraps, which can readily be removed when no longer required.

Sitting up at night into the early hours of the morning is one of the most certain modes of producing insomnia, and is in other ways injurious to health. Diet should be carefully regulated, and the constant eating of highly seasoned food stuffs is harmful to the economy of the organism. Neurotic subjects are better without alcoholic stimulants; beverages such as milk should be taken. Work should be confined to proper hours, and sufficient time should be allowed for meals. Many a man has sown the seeds of dyspepsia and subsequent ill health, not uncommonly leading to neurasthenia or mental disorder, by taking hasty meals. It is bad economy to monopolise for work the hours which should be properly used for eating and sleeping. Periodically there should be a total cessation from all work; the annual holiday should be looked upon as a necessity rather than a luxury. The strenuous life must have constant relaxation, and at least one holiday in each year should be of a prolonged nature. All this and a great deal more is required to keep a sound mind in a healthy body.

To draw nearer to the subject, if an individual is known to be predisposed to insanity, his education and training call for peculiar care in order to counteract the innate tendency. The difficulty which the family physician has to surmount is, that inasmuch as the instability is probably a heritage from the parent, on *à priori* grounds the parent is unsuited to train

the child. Children are quick to imitate their teachers, and irritability and discontent may be readily acquired from an eccentric or querulous parent. Degeneracy in the heads of a household permeates the whole atmosphere of that house, and it is no matter for surprise that the receptive mind of the child becomes affected. Kindergartens have proved themselves to be invaluable for the training of children so circumstanced. The kindergarten not only removes the infant from unhealthy surroundings and teaches control, but educates the faculty of observation and manual dexterity without burdening the memory with facts.

The happiness of the individual depends largely upon how he was taught in childhood to view external things. Peevishness and discontent breed jealousy and discord, and these in their turn tend to suspicion or melancholy. Selfishness begets pride and inordinate self-esteem, and these may form the basis of subsequent mental disorder. Instruct the child how to live, and correct vicious tendencies, teach him that he is born into a community in which the good of others is the foundation of temporal happiness. As soon as the lesson of altruism is learned, the groundwork is laid for other knowledge. Remember that information can always be acquired when once the power of application has been taught. It is otherwise with disposition. Character is moulded early in life, and the actions and thoughts of every man throughout his life will be coloured by the different qualities of which his character consists.

Before passing on to consider curative measures, a short space must be devoted to the consideration of those persons who have reached adult life and are in danger of a mental break-down. The term 'incipient insanity' is frequently applied to advanced cases of mental disease; the true 'incipient' stage is unhappily too often overlooked. In some measure the fault of this lies with the medical profession, the members of which do not devote enough attention to studying disease in its very earliest phases. There is too great a disposition to put the patient off with some commonplace remark, such as that the liver is out of order, or that the system requires a tonic. Is not the examination of a patient, complaining of a seemingly trifling disorder, sometimes a

little perfunctory, a little lacking in thoroughness? Whatever may be the case with other forms of disease—probably no distinction need be drawn—the early symptoms of mental disorder are very insignificant; it is only when we find such symptoms as restlessness, inattention, and irritability associated that the suspicion arises that all is not well. Mental disorder in its minor forms is far more common than the average practitioner thinks: probably no inconsiderable percentage of his work belongs to this class.

But the error is not altogether on the side of the medical profession: it is in the ignorance of the layman that the chief danger lies. He does not recognise the importance of consulting his medical attendant when change of character is the only apparent symptom. He attributes to bad temper any sudden appearance of querulousness or irritability, neglecting altogether the fact that the sufferer may in the past have been of a disposition uniformly equable and placid. It is only when the disease becomes established that the friends will tell you that they have noticed the change coming on for months, but that they 'thought it was nothing.' This ignorance accounts for a certain proportion of the insane becoming confirmed in their mental disorder; but unhappily the folly bred of ignorance does not end here. Even when relatives or friends have had their suspicions aroused, and have gone so far as to consult a physician, they will resent his opinion and ignore his advice if he tells them the truth. It is wiser to avoid the use of objectionable terms; even so colourless an expression as 'incipient insanity' is not the best way of expressing some mental change due to nervous exhaustion.

The physician should clearly state that the patient must consent to be treated, and should definitely indicate the risk which neglect of advice entails. The patient should be directed to give up all work, and rest. Travelling is worse than useless: as a rule the patient returns worse rather than better. Physical exhaustion increases all nervous and mental symptoms. A sea voyage or foreign travel is often permitted or even suggested, being a form of treatment which appeals to the patient, as he is restless and must keep on the move. It is nevertheless, as a rule, wrong treatment. Rest is the only way by which the nervous system can recover tone, and the physician's

duty is to place the patient under the most favourable conditions for nature to do its work. The tendency of most diseases is towards amendment, but this tendency is not proof against conduct calculated to aggravate the disorder. To be quiet and rest is the most difficult of all advice for a man to follow, but he is a poor physician whose advice must accord with his patient's wishes. The fact that a patient is restless should make the medical attendant all the more determined in his actions and definite in his instructions.

Travelling has its proper place in the scheme of treatment of disease; that is to say, the last. It should be the final stage before returning to active life, and, properly employed, is a most beneficial remedy. In the early weeks the patient must be content to rest quietly in some farm or country house, and be fed with a plentiful supply of eggs and milk. Watch the body weight; it usually falls before the development of any mental disturbance, and rises when the patient is progressing favourably. The appetite frequently becomes enormous when convalescence sets in, and the weight may increase rapidly. This should give rise to no anxiety, for even if the patient becomes stout, a certain amount of weight will disappear after recovery. It is a well-recognised fact among physicians experienced in mental disease that so long as a man keeps well nourished, with a steady weight, there is less likelihood of any relapse.

The patient should live by rule; his day should carefully be divided so as to permit ample opportunity for rest. Exercise should be taken sparingly at first, but, as strength returns, it may be increased. A cheerful companion, who will prevent time hanging too heavily, is an advantage. The hour for retiring at night should not be later than ten o'clock. If the patient is sleepless, he must take some food during the night. Attend to the bowels carefully. In some cases a course of mineral waters is very beneficial. Baths may be occasionally given with advantage. When a patient is improving do not let him return to work too soon; it is a common mistake, and frequently leads to a serious relapse.

Curative Treatment.—Attention must next be directed to the curative measures upon which reliance should be placed in the treatment of mental disorder in its more advanced forms.

When such marked symptoms of mental disturbance have presented themselves that relatives begin to apprehend the possibility of a mental break-down, it is usual to find that insanity is so well established that a prolonged course of treatment will be necessary before health can be restored. In the previous chapter, a scheme which may be followed by the physician in making an examination of a patient who shows symptoms of mental disorder, has been recommended. Physicians, whose daily duty lies in the care and management of the mentally affected, frequently meet with a scoffing criticism, born of ignorance, that there is no treatment beyond that of attending to the patient's board and lodging, and from time to time relieving urgent or distressing symptoms. Such statements merely prove the speaker to be innocent of even a superficial knowledge of mental disease. He demonstrates his inability either to diagnose or cope with mental disorder in its earliest forms. What a formidable list of diseases, belonging either to the province of medicine or surgery, could be compiled, in which, if through neglect during the earlier months of their development the malady has become organised, palliative treatment is all that is possible.

Mental disease, like many other maladies, must be treated in its early stages if complete recovery is to be attained. Who would permit a case of phthisis to drift until the lungs had become riddled with cavities? But if from whatever cause such was the plight of the patient, the only possible treatment might well consist in attending to his board and lodging, and from time to time relieving urgent or distressing symptoms. It is true that in many cases of insanity, but by no means in all, the physician's treatment must be purely palliative; and no one deplores it more than he, recognising as he may that the hopelessness of the condition is often due to failure on the part of some one in appreciating sufficiently soon the onset of disease.

The first duty of a physician, upon seeing his patient, is to diagnose the condition. Do not be satisfied merely by finding out that the man is insane, but try to discover whether there is a physical cause that has given rise to the mental aberration. If some bodily disease is found, its relationship to the insanity must be considered; for in some instances the two

maladies may co-exist without marked influence upon each other. If physical disease is discovered, it must be treated, if remedy is possible.

The next point to be decided is, where shall the patient be treated? In almost every case it is necessary to remove him from his home surroundings, and place him in the charge of strangers. There are many courses which may be taken, the financial position of the patient being as a rule the determining factor. If the means are small, alternatives are correspondingly few; and in most instances the patient must be sent either to some large private asylum or to some hospital for mental diseases where a charge of about thirty shillings to two guineas a week is made.

As has been already pointed out, there is a very considerable difference between 'unsoundness of mind' and 'certifiable insanity.' If a person is so insane as to be certifiable, then he must be seen by two medical men, and, upon their certificates and a reception order from a judicial authority, be placed in any institution where private patients are received. Some persons recognise that they are suffering from mental disorder, and are quite willing to place themselves under treatment. If such a person is not so insane that he ought to be certified, and is willing to be treated in a hospital or private asylum, he can do so by signing a document saying that he wishes to place himself under the care of the medical authorities for treatment. He then goes into the institution as a voluntary boarder; that is to say, at his own request. The patient does not undertake to stay any specified time, as is the case with alcoholics under the Inebriates Act, and he may leave at any time upon giving a day's notice in writing to the medical superintendent; this notice is designed to give time for communication with the man's friends.

If the patient is able to pay about three or four guineas and upwards a week, his friends have a larger choice both of hospitals and private asylums. The advantages that are usually to be derived from sending a patient into a hospital for mental diseases are that the percentage of curable cases is generally larger than is found in private institutions, and there is commonly greater opportunity for amusement and entertainment. The disadvantage is that the numbers are so much greater in the public institutions, that the

same amount of privacy that can be enjoyed in a licensed house is not obtainable. The main advantage of a private asylum is that it is possible to obtain a greater number of the small comforts of life, and they have a closer resemblance to home life.

The public need have no hesitation in placing their relatives in these private homes, as in the vast majority of them everything possible is done for the good of the patients. There is no need to fear that a patient will be detained longer than is necessary, or after he has recovered. Private asylums have the same official supervision from the Commissioners in Lunacy as a public hospital, and, in addition, six visits a year by the visiting justices in the case of country houses, and four extra visits annually by the Commissioners in Lunacy in the case of houses in the metropolitan district. Further, save in very exceptional cases in which the patient is actively dangerous to himself or others, the petitioner can remove his relative at any time; and even in the exceptional instance just cited the veto which the medical superintendent can exercise is only of a limited nature. The Act endows the medical officer with the power of objecting to the removal of a patient who is dangerous to himself or others, unless he is satisfied that the provision that is being made for him is adequate; and if he exercises this right, he has to forward his objections in writing to the office of the Commissioners in Lunacy. Private asylums are most valuable institutions for the treatment of a certain class of the insane; and even if they were the legitimate objects of criticism sixty years ago (and it may be doubted whether they were worse managed than the public asylums of those times), at the present day they are conducted for the good of their patients.

There will always be some ignorant persons ready to retail exaggerated and sensational stories as to the methods employed in these institutions; they need not be taken seriously, as almost invariably it proves that they are the victims of a vivid imagination or warped judgment. Without doubt, some private asylums are good, others indifferent. Are they peculiar in this? May not the like comment be made on our public institutions with equal fairness? The system should not be condemned because the standard is not equally high in all.

When money is not an object, or the financial position is such that it need not be primarily considered, some persons prefer to send a relative to the private house of a medical man. The lunacy law permits the reception of one certified patient into a private house, and a second may be sanctioned if it can be proved to the satisfaction of the Commissioners in Lunacy that such a course will benefit the original patient. At the present time there is a Bill before Parliament which if passed will allow the detention of persons of unsound mind under care without being previously certified as insane. Many of the public object to certificates of insanity, as they consider that, even after recovery, the fact of having been so certified leaves a stigma on the patient which may interfere with his future work in life. It is for this reason that an attempt is being made to legalise the detention of the insane for a term of six months if necessary, during the incipient stage of the illness. As the law at present stands, anyone who takes into his house a person of unsound mind, who is certifiably insane, and yet who is not under certificates, renders himself liable to prosecution and a fine of fifty pounds. There is no doubt that the existing legal requirements are objected to by many persons; but it is well to remember that the stringency of the Lunacy Act 1890 is due to the attitude of the public at the time when its provisions were under consideration. The public demanded greater protection for the insane, and they got it. Perhaps in some directions the stringency of the Act might be relaxed with advantage, but taken as a whole it has proved to be an efficient and workable piece of legislation.

To return to the question of treatment of patients in single care. This is a very favourite mode of treatment for the more wealthy classes; and it has undoubted merits, not unaccompanied by definite dangers. Many persons take mental patients into their houses, either to eke out a slender income or to enable them to live in a larger house than would be possible but for the presence of these 'paying guests.' This is all quite proper, provided that in undertaking their charge they fully realise all the responsibilities which it entails. No person should undertake the care of an acute case of insanity unless he is willing and able to devote a good deal of his

time to his patient. A garden is an absolute necessity, for it must be possible for a patient to get out of doors without having to walk on the public roads. Under favourable circumstances there is no arrangement by which a patient can have so much individual attention and so near an approximation to home comforts as in single care. It can be one of the best or one of the worst methods of treatment of the insane, and its success must largely depend on the conscientious energy of those who undertake it.

A brief sketch has now been made of the various places in which a patient can be treated. They all have their advantages and disadvantages ; the choice in any given case must vary with the requirements and financial position of the patient. In coming to a decision, the type of the mental disorder from which the individual is suffering must also be considered. For instance, a violent case of acute mania cannot readily be treated in a private house; and very suicidal persons also require special arrangements.

Wherever a patient is sent the treatment must be the same, and this is the next topic for detailed discussion. The first and all-important point is to secure rest for the patient. It is most extraordinary to find that the value of rest in the treatment of the insane is so little appreciated and understood. Absolute rest in bed is undoubtedly the best, and, it may almost be said, the only, way in which acute cases may be treated. The term *acute* is used as indicative of recent and early cases. Rest is freely used in other branches of medicine and surgery, and yet is often denied to the sufferer from mental disorders, whose condition above all others claims it. People who are weary both in mind and body are often tramped about by nurses instead of being encouraged to stay in bed. It is, of course, very hard to keep some patients in bed, but the difficulty should be faced and not shirked. Rest breeds a desire for rest; a habit of rest may be established, and a disposition to restlessness overcome.

The emphasis here laid upon the importance of rest must not be misconstrued into a suggestion that it is always appropriate and will always prove beneficial. It must not be supposed that merely because a person is insane he should be kept in bed. For instance, in most cases of chronic

mental disease it would be useless. But with persons who suffer from recurrent outbreaks of excitement or depression, the judicious employment of occasional days in bed may ward off the attacks. Again, rest in bed is not of much value in the case of patients with chronic delusional insanity, or in cases in which the mental aberration has been progressing over an extended period of time. Its greatest utility will be found in the treatment of recent cases of mania and melancholia. These patients should be kept absolutely in bed for some weeks. The rooms in which they are kept should be airy and well ventilated. During the spring and summer months much advantage might be gained by placing some of the patients on beds in the open air during the day. Rooms might be specially built in which the roofing would be the only fixed part, the sides and ends being thrown open in suitable weather. After a patient has sufficiently improved, he may be allowed to get up once or twice a day to take a little exercise, but he should return to bed when this is over. In this way a patient can be kept completely at rest for many weeks until his strength has returned, and with it a marked mental improvement. Massage is not of great use in the treatment of the insane, and, though valuable in some cases, in the majority it is not to be recommended; reliance will be more wisely placed upon rest and good feeding.

Diet.—The diet should consist of a liberal supply of nourishing food. Milk is invaluable in the treatment of mental disease, and patients should take at least a pint and a half a day in addition to their regular food. Some persons will object that they cannot take milk, as it disagrees with them, but the physician must not give way; and the difficulty can usually be overcome by adding to the milk some lime water or barley water. When possible the addition of some cream to the milk is helpful in fattening the patient. New-laid eggs are also an excellent food for the mentally afflicted. Milk puddings and other farinaceous food stuffs should be added to the dietary. Fish and meat may be given with advantage, but the amount of meat should be limited. The latter should be lightly cooked. Fresh vegetables are important, and should be given daily.

During the early weeks of illness it will be necessary to

keep a close watch on the amount of food the patient takes, and if enough is not taken each meal he must be fed with a basin of bread and milk, or persuaded to drink a tumbler of milk in which an egg has been beaten up. A conscientious nurse, who will never allow the patient to pass a meal without seeing that he has eaten a sufficient quantity of food, is most helpful in treating acute cases. As convalescence sets in, the tendency is for a patient to eat enormous quantities of food, and this should be permitted so long as the food is assimilated and there is no sickness. Dements will usually eat more than is good for them, and their appetite must be watched and the amount of food regulated. Dietary in its application to special diseases has been touched upon in describing the various forms of insanity.

Alcohol.—Alcohol is not required, and need not be given. To many patients it is harmful ; milk or lime water should be substituted. On the other hand, in certain cases already indicated, it is most necessary to give alcohol, as without its assistance such patients would die.

Forcible Feeding.—The various means of artificial feeding at our disposal are : (*a*) feeding cup, (*b*) spoon feeding, (*c*) nasal tube, (*d*) large œsophageal tube, (*e*) rectal feeding.

Feeding by means of a feeding cup or spoon is a useful mode of giving nourishment in a certain class of the insane, but the use of these aids is necessarily limited to those cases in which there is no very active resistance. If a patient persists in clenching his teeth or forcibly ejecting any food that is given to him, resort must be had to the nasal or œsophageal tube. For obvious reasons rectal feeding is of little value in the treatment of mental disease, except in those cases in which stomach feeding is contra-indicated. The insane require a large amount of food, and this can only be given when the food is passed into the stomach. Some authorities favour nasal while others prefer œsophageal feeding. Probably neither is suited to all patients, each having both advantages and disadvantages. It is by experience that the physician must determine which method to adopt in any given case.

These feedings are performed in the following way : The patient is either held in a chair or laid on a mattress,

the latter being usually the preferable course. His head is placed upon a firm pillow, and an attendant kneels above him and holds the patient's head between his hands, or, if necessary, between his knees, care being taken not to injure or bruise the ears. If assistance is difficult to get, a second attendant can kneel on a towel or sheet which has been stretched across or above the patient's knees, and the same attendant can hold both of the patient's wrists. If there are plenty of nurses available or the patient is inclined to struggle violently, it is wise to have an assistant for each leg and arm. On no account must anyone be allowed to kneel directly on the limb of any patient.

Nasal Feeding.—This is carried out by passing a long soft red rubber tube (size No. 11–12), to which a funnel has been attached, through the nose into the œsophagus. The tube must be carefully lubricated with oil. It will usually be found that one side of the nose allows a passage more readily than the other, owing to some deflection of the nasal septum. When the tube has been passed, a little of the fluid can be poured into the funnel in order to see whether the tube is clear. The *advantages* of nasal feeding are as follows : (*a*) that not many nurses are needed to hold the patient ; (*b*) that no gag is required, and therefore there is no risk of any damage to the teeth, an important point in the feeding of women ; (*c*) that regurgitation or vomiting is more difficult to effect, and is less liable to occur when the tube is withdrawn. The *disadvantages* are not of a serious kind, viz. : (*a*) that nasal takes a longer time than œsophageal feeding ; (*b*) that the lumen of the tube being smaller, it is more readily blocked up by mucus or solid masses of food ; (*c*) that if a patient is continually shouting while the physician is passing the tube, it readily goes into the mouth or larynx ; in the latter event the accident is readily recognised by the stridor which it sets up ; (*d*) that nasal feeding, if long continued, may lead to a very troublesome form of ulceration of the mucous membrane of the nose.

Œsophageal Feeding.—The tube used in œsophageal feeding is a soft red rubber tube (No. 24–28). With this method a gag is required unless a patient has lost all his teeth. The serrated surface of the gag must be protected with some rubber. If there is any difficulty in inserting the gag, the

handle of a spoon will be found useful in separating the teeth. Care must be exercised not to try to force the patient's mouth open too rapidly, otherwise the jaw may be fractured. The mouth does not require to be opened very wide. The tube can be lubricated by dipping it into the food, as this is preferable to using oil. The tube is passed to the back of the pharynx, and when the patient swallows, it is carried down into the œsophagus. Do not pass the tube into the stomach, as it is not only unnecessary, but increases the liability to vomiting.

The following are the *advantages* of this mode of feeding: (*a*) that the meal can be more rapidly given; (*b*) that more solid food can be administered, and drugs such as sulphonal will pass through the tube without causing a blockage. The *disadvantages* are: (*a*) that a greater number of assistants is usually required than with nasal feeding; (*b*) that a gag has to be employed; (*c*) that regurgitation of food can easily be effected by many patients. If food is vomited into the mouth *by the side* of the tube, the tube and the gag must at once be withdrawn to allow the patient to empty his mouth, otherwise food will be drawn into the air-passages; (*d*) that persons with a small pharynx become very cyanosed during the feeding; (*e*) that when the tube is withdrawn at the completion of the feeding there is greater liability to vomiting than is the case when a nasal tube is withdrawn. To obviate this difficulty we recommend that the operator remove the tube during inspiration.

The food that is given in either nasal or œsophageal feeding should consist of milk (at least three pints daily), eggs (four to six daily), soups, vegetable extracts, stimulants, and salt. Peptonised foods are often useful. The quantity given each meal should be rather more than a pint, the allowance for men being somewhat larger than that for women. If there is a tendency to vomiting, it is advisable to concentrate the meal into a smaller quantity. Patients must be fed three or four times a day, and, if seriously ill or in a very weak state, they may be fed every four hours night and day. The addition of some cream to the meal is useful in some cases.

Bowels.—The bowels require constant attention. As has been pointed out, constipation is a very common symptom in

all forms of mental disorder, and there is little doubt that chronic constipation is an important factor in the production of insanity. Further, the fact that auto-intoxication is now considered to be a weighty element in mental disease, accentuates the necessity of keeping the bowels freely open. Many persons do not take a sufficient amount of water to drink, and this should be corrected. The regular habit of obtaining a daily action of the bowels should be formed. Certain articles of diet are helpful in regulating the bowels.

When somewhat more active treatment is necessary, the employment of mineral waters will be found invaluable. Salts have the great advantage over other varieties of purgatives in that the more they are used the more intolerant the patient becomes towards them; in other words, the dose has to be steadily lessened after they have been taken for some time. With most purgatives the effect is exactly the reverse, and the dose has to be constantly increased in order to obtain the desired result. Of the aperients most commonly used, cascara sagrada, either in the form of tabloids or liquid extract, is useful. Calomel has the advantage, very considerable in some cases, that it can be so easily administered. Soap or oil enemata are preferable to aperients in the treatment of some patients, and may be given three or four times a week; or a warm water enema may be administered daily.

If the patient is very insane, the nurse should keep a careful record of the action of the bowels, as through neglect serious obstruction may occur. Some hypochondriacal persons are constantly complaining that their bowels never act, and they will ask daily for aperients, which are not only unnecessary but actually harmful. It is well from time to time to keep such persons in bed, and make them use a night stool, so that the action can be inspected. In conclusion, the student must remember that careful attention to the bowels is one of the most necessary details in the treatment of the insane, as a loaded condition of the intestines will aggravate all the mental symptoms.

Treatment of Intestinal Infection.—Apart from the treatment of constipation by aperients, many authorities advocate the use of intestinal disinfectants. There is no doubt that many of the insane are affected by the continual absorption

into the blood of poisonous substances which are generated by putrefactive and fermentative changes taking place in the intestines. Some physicians advise five-grain doses of beta-naphthol to be taken about two hours after food ; others prefer soda-salicylate or salol. Probably, however, very little advantage is to be gained by the administration of these drugs, and it may be regarded as more useful to have the stomach washed out daily with warm water before breakfast. If the patient is being tube-fed, the mouth must be constantly swabbed out with a plug of lint saturated with boric glycerine.

Exercise.—Great stress has already been laid on the importance of ordering as much rest as possible in the treatment of mental disorder. As the strength improves, gentle exercise can be permitted ; but the patient should never be allowed to become fatigued. The antiquated theory that the restless patient should be tired out by exercise is erroneous. At first exercise should be limited to one or two hours a day. Even when convalescence is well established, great care should be taken to prevent the patient from overdoing himself. On the other hand, if the physical strength is good, and there are no signs of exhaustion, physical exercise may be prescribed with advantage, and may take the form of games such as golf or tennis. Physical drill is very beneficial to the adolescent cases of mental disorder, and whenever possible should be conducted daily for a short time.

Sleep.—The important question of sleep has been fully dealt with elsewhere.

Violence.—Some patients are so intensely violent that this symptom requires special treatment. In a private house violence is very difficult to control, and has usually to be restrained either by drugs or mechanical means. Neither of these methods can be considered satisfactory, and for this reason violent patients should be treated in hospitals or asylums. Many patients, who constantly struggle and fight with nurses or attendants, will, when left alone, become tranquil. Temporary seclusion is one of the best ways of treating violence. The term ' seclusion ' signifies the isolation of a patient in a room by himself. This can be done in a small bedroom, the windows of which are protected, and in which there is no breakable furniture. In some institutions padded

rooms are used for this purpose. A padded room is a chamber in which the walls and the floor are protected by cushions of shredded cork or other substances covered by rubber or canvas. These rooms are very valuable for infirm patients, who are restless and apt to fall about. If a patient is alone he must be constantly visited or observed through a window in the door. Some authorities give hypodermic injections of hyoscin, hyoscyamin, or duboisin, or large doses of hypnotic drugs to excited patients; but probably seclusion is preferable. In institutions for the insane the amount of seclusion, and the reason for its employment, have to be entered each day in a special journal kept for the purpose.

More rarely patients are met with who are so violent that they are not fit to be left in seclusion, as they may seriously injure themselves. The treatment of such cases is very difficult, and much responsibility is involved in the care of them. Three courses are open. The patient may be stupefied with some drug in the hope of inducing sleep; he may be held by several attendants, or he may be restrained by mechanical means. Probably in these exceptional cases the last-named method is the best, and the second is perhaps the most objectionable. Constant struggling with a patient hour after hour must be bad, and is very trying to the temper of the best nurse. The use of mechanical restraint ought not to be encouraged, and resort should not be had to it unless it be absolutely necessary for the protection of the patient or others. The tendency of the present time is for mechanical restraint to disappear as a mode of treatment; nevertheless in some cases it may be employed with advantage. For example, a very suicidal patient can frequently be kept quiet, and may even fall off to sleep, when restrained mechanically. Also patients who are constantly trying to injure their eyes or other parts of the body should be restrained by using gloves.

There is a tendency in some quarters to employ chemical rather than mechanical restraint. No doubt this is the most humane way of treating some violent patients, but it is a mode of treatment which should be avoided if possible. The use of drugs for allaying excitement is very valuable in some cases, but should be avoided where possible in acute recent cases.

That mechanical restraint should be used very sparingly, and only when the patient's condition requires it, cannot be too strongly urged; undeniably, however, it has a place in the treatment of the insane, and is preferable to drugs in curable cases. The best and most common form of restraint is padded gloves. Perhaps the term 'mechanical restraint' is too forcible for so slight an interference with the movements of the patient, and might with advantage be reserved for the more severe forms, which are seldom employed. Padded gloves have the objection that the lock with which they are fastened is apt to cause an abrasion of the skin of the wrist. This evil could be avoided by making the glove and sleeve in one piece; in other words, the sleeve might end blindly. For some reason the Commissioners in Lunacy have omitted this from their list of legal methods of restraint, and consequently it cannot be employed at the present time. Only certain forms of restraint may legally be used, according to the rules of the Commissioners in Lunacy. The proper understanding of what is lawful restraint is so important that the student will do well to read carefully the following regulations, which are those drawn up by the Commissioners in Lunacy pursuant to section 40 of the Lunacy Act 1890:

[Copy]

'*Regulation made by the Commissioners in Lunacy as to Instruments and Appliances for the Mechanical Restraint of Lunatics*

'Lunacy Act 1890, Section 40

'(1.) Mechanical means of bodily restraint shall not be applied to any lunatic unless the restraint is necessary for purposes of surgical or medical treatment, or to prevent the lunatic from injuring himself or others.

'(2.) In every case where such restraint is applied a medical certificate shall, as soon as it can be obtained, be signed, describing the mechanical means used, and stating the grounds upon which the certificate is founded.

'(3.) The certificate shall be signed, in the case of a lunatic in an institution for lunatics or workhouse, by the

medical officer thereof, and in the case of a single patient, by his medical attendant.

'(4.) A full record of every case of restraint by mechanical means shall be kept from day to day; and a copy of the records and certificates under this section shall be sent to the Commissioners at the end of every quarter.

'(5.) In the case of a workhouse, the record to be kept under this section shall be kept by the medical officer of the workhouse, and the copies of records and certificates to be sent shall be sent by the clerk to the guardians.

'(6.) In the application of this section "mechanical means" shall be such instruments and appliances as the Commissioners may, by regulations to be made from time to time, determine.

'(7.) Any person who wilfully acts in contravention of this section shall be guilty of a misdemeanour.

'*Regulation*

'In pursuance of sub-section 6 of the above section of the Lunacy Act 1890, the Commissioners in Lunacy, by this regulation under their common seal, do hereby determine that "mechanical means of bodily restraint" shall include all instruments and appliances whereby the free movement of the body or of any of the limbs of a lunatic are restrained or impeded, but that the following instruments and appliances only shall be made use of for such purpose:

'1. A jacket or dress, laced or buttoned down the back, made of strong linen, with long outside sleeves fastened to the dress only at the shoulders, and having closed ends to which tapes may be attached for tying behind the back when the arms have been folded across the chest.

'2. Gloves without fingers, fastened at the wrists with buttons or locks, and made of strong linen or chamois leather, padded or otherwise.

'3. If the continuous bath be employed, the use of a cover to the open bath, with an aperture therein for the patient's head, shall be deemed to be mechanical means of restraint.

'4. The wet or dry pack.—If, and when, either is used, the patient shall be swathed in sheets and blankets only, the outer sheet being, if necessary, sewn or pinned. No straps or ligatures of any kind shall be used, and the patient shall be released for necessary purposes at intervals not exceeding two hours.

'5. Sheets or towels when tied or fastened to the sides of a bed or other object.—When these are used only for the purpose of forcible feeding, and merely held by attendants, and not tied or fastened, their use shall not be considered to come under the head of mechanical restraint.

'It is essential to the safe employment of any of these forms of restraint, except No. 2, that the patient be visited frequently by a medical officer, that he be kept under continuous special supervision by an attendant, and that under no circumstances he be left unattended; and it is hereby so ordered.

'The Commissioners direct that at each visit of Commissioners or a Commissioner to an asylum, hospital, or licensed house, or to a single patient, all instruments and mechanical appliances which may have been employed in the application of bodily restraint to a lunatic since the last preceding visit, be produced to the Visiting Commissioners or Commissioner by the superintendent, resident medical officer, or resident licensee, or the person having charge of the single patient.

'It will be seen that the section requires that in every case where mechanical restraint is applied, a medical certificate describing the mechanical means used, and stating the grounds upon which the certificate is founded, be signed in asylums and hospitals by the medical superintendent, in licensed houses by the resident or visiting medical practitioner, in workhouses by the medical officer, and in the case of single patients by the medical attendant; that a full record of every case of restraint be kept *from day to day*; and that a copy of such records and certificates be sent to the Commissioners in Lunacy at the end of every quarter.

'In framing this regulation, in which they have defined the "mechanical means" which may alone be used in the imposition of restraint, the Commissioners in Lunacy have merely discharged the duty cast upon them by the enactment quoted above; and they desire to guard themselves most strictly against the supposition that they have thereby given any greater countenance to the employment of this form of treatment than they have hitherto shown.

'While recognising, as the enactment recognises, the possible occurrence of cases in which its employment may be necessary and consistent with humanity, they remain of opinion that the application of mechanical restraint should always be restricted within the narrowest possible limits, that it should not be long continued without intermission, and that it should

be dispensed with immediately that it has effected the purpose for which it was employed.

'This regulation shall come into operation on the 1st day of July, 1895, on and from which day the regulation of the 9th April, 1890, shall cease to have effect, and a copy shall be inserted at the beginning of every register of mechanical restraint.

'Sealed by order of the Board,

'G. Harold Urmson,

'*Secretary.*

'19 Whitehall Place, London, S.W.:
The 17th day of April, 1895.'

Suicide.—The prevention of suicide is one of the most trying responsibilities to every physician and nurse whose work is the care and treatment of the insane. The strain of continual watchfulness is at times very severe, and can only be fully realised by those who have had experience in such nursing. It is necessary to foresee everything that the patient may devise in the way of self-destruction, so that his intentions can be frustrated. The nurse must be ever on the alert, and for this reason frequent relief is indispensable. This point is not thoroughly appreciated, and persons are apt to think that a nurse can go on night and day watching a patient. No doubt it is a difficulty in nursing patients in single care; but, unless the relatives are willing to have a sufficient staff of nurses, a very suicidal patient should not be treated in a private house, but should be sent to an asylum.

It is not possible to enumerate all the precautions which are necessary, varying as they do in individual cases, but an outline of the methods which should be employed may prove useful. The patient should be thoroughly searched to see that nothing is secreted about his body or clothes. He should never be left unattended, and should be transferred from one nurse to another. In dressing a female patient, the hair should be stitched up with thread, and no hair-pins used. Buttons should take the place of tape on the underclothing. The pocket-handkerchief should be kept by the nurse. The food should be cut up and so prepared that it can be taken with a spoon. The cups should be made of thick porcelain, so that they cannot be readily bitten in pieces. The patient should not be allowed to go to the lavatory alone.

The employment of suicidal persons is not easy. Women should not be allowed to use scissors, knitting needles, or other pointed instruments. They can help in dusting and tidying the rooms. Some patients will throw themselves downstairs, and it is necessary to take every precaution when taking them on staircases. Window sashes should be blocked, so that they will not open more than a certain distance. Fireplaces should be protected by small guards. Out of doors the patient must be watched to see that he does not pick up stones, pieces of glass &c. and eat them. Hat pins are dangerous weapons, and should not be used. String, matches, and anything by which a patient may harm himself should be carefully kept out of reach. At night he should be undressed, and then searched to see that nothing has been secreted anywhere. The clothes should be removed from the room in which the patient sleeps. It must not be forgotten that, in spite of every precaution, a person intent upon suicide may ultimately succeed in eluding even the most constant and careful supervision. A patient has been known to strangle himself under the bed-clothes when the nurse in charge has been sitting beside him. Never allow a suicidal patient to cover his face up when in bed.

When recovery is taking place, much judgment is required in knowing how far to relax the stringent rules of supervision which have been necessary during the acute stage of the illness. A great injustice may be done to the patient by not allowing greater freedom; on the other hand, if anything happens as a result of lessened supervision, the physician will be blamed for his error of judgment. Certain risks must be taken in the interests of the patient, as nothing disheartens a person so much as, when feeling himself better, to find that he is not trusted; and nothing gives him greater encouragement than to see that he is being allowed more freedom. Patients when they are recovering usually realise that the physician and nurse have their duties to perform, and if they give a promise not to harm themselves they are generally to be trusted.

It is more difficult to treat a suicidal patient in a private house than in an institution; in the former all rules seem directed against the particular patient, while in the latter the regulations are of general application, and must be conformed

to by all. As observed elsewhere, there need be no hesitation in speaking to a patient upon his suicidal ideas ; conversation on the subject is often far more helpful than distressing.

Homicide.—A truly homicidal person is fortunately not a common type of patient ; but when met with he is a sore responsibility. Many patients may injure attendants or others by impulsive violence, but he who quietly and cunningly matures a plan of homicide is far more dangerous. He watches his opportunities, and may use them with deadly effect. Such patients should be placed where plenty of assistance is always at hand, and should be separated from other patients whose tendencies are towards violence. Concerted action is rare in asylums, but when it does occur it is in the homicidal class that the originator is likely to be found.

Dangerous patients should be watched when in the garden lest they secrete any large stones or other formidable weapons of attack. A stone or a billiard ball in a stocking is a very favourite instrument with which to make an assault. Persons of homicidal tendency should be placed under as close supervision as suicidal patients, and should be as frequently searched. Only a spoon at meals should be allowed ; and it is a wise precaution to place them at a small table by themselves. At night attendants should not visit them singly. On recovery these patients should be detained for some little time to see that convalescence is complete, as too early discharge may lead to some tragedy.

Destructiveness.—Destructiveness is frequently a trying symptom in some types of mental disorder, for a destructive patient can do many pounds worth of damage in a very short time. Some are more inclined to destroy their own clothing ; others confine their attention to breaking furniture and crockery. If there is a disposition continually to tear up clothing, it is advisable to dress the patient in some material which it is difficult or impossible to destroy ; this garment should be an outer garment, the ordinary underclothing being worn as usual. The furniture and all the vessels used for feeding should be very strong, as many patients will abandon attempts to destroy when they prove uniformly unsuccessful.

Moral Treatment.—What, for the want of a better term, may be called the moral treatment of the insane, will be found

to be a most potent remedy in the hands of a skilled physician. The personality of those with whom we are constantly thrown in contact influences us in no small degree. Even when we are in robust health we are attracted or repelled by different persons; we trust one man, and distrust another; we feel that we are understood by one, misunderstood by another; we are unconsciously swayed by the thoughts and suggestions of some men, while the ideas of others are unheeded, not necessarily because they are distasteful, but because they do not carry force and conviction with them.

Now, if this is the case with the healthy mind, how much more must the person with a diseased mind lean upon the thoughts and help of others. Some physicians and nurses have the natural gift of inspiring their patients with hope and trust. The sick man is the better for seeing them, their visits seeming to imbue him with renewed life. The physician is apt to forget how closely the patient watches him, and what importance is attached to all that he says; he at times forgets that, when the visit is concluded, the patient will revolve over and over again in his mind all that has passed. Patients do not believe all that they are told; but of two physicians expressing the same opinion, the one will carry conviction by his personality and be believed, while the other, through lack of sympathy, will simply be listened to and disbelieved. Never forget that the insane man should be treated as an ordinary patient, and always listen to what he has to say.

The physician who would be successful in the treatment of mental disease must have many attributes, and it is well for him that he should learn this while he is still young, as the necessary qualities may take years to acquire. Patience must be learned, for of all people the insane are the most trying. Without patience the treatment of mental disease must be to a great extent a failure, as the impatient physician wearies himself, while producing little or no good on the man he seeks to benefit. Another secret of success is the ability to impress the patient with the interest that you take in his case. This faculty of showing interest and enthusiasm, which moreover should be real and not feigned, is of intense value; it never fails to infuse into the patient a sense of confidence and assurance that his complaint is understood.

Instructions as to treatment must be given in an unequivocal manner. Firmness is a necessary attribute, but only so far as the proper conduct of the case is concerned. Concessions on unimportant matters often save much unnecessary friction, and render the patient more tractable, as he feels that he is not dictated to on all points. Never allow the patient to get the upper hand, and let him clearly understand that he is under medical orders, and that all questions must be decided by the physician. The medical attendant, on the other hand, knowing his power, should be exceptionally careful not to misuse it. Kindness and thoughtfulness for the feelings of the patient are always appreciated by the invalid, and go a long way towards making the relationship between him and his physician cordial and pleasant. All grievances should be patiently listened to and investigated. Do not jump to the conclusion that the patient is in the wrong without giving him a fair hearing; but if, after listening to all he has to say, you consider that he is mistaken, do not hesitate to tell him so, and give him your reasons for coming to such a conclusion.

Treat the insane as if they were sane. Never promise to do a thing which you know you will be unable to fulfil. You may frequently have to disagree with the views of your patient; by all means do so when necessary, but do it in a kindly way, explaining to him that it is only for a time that he has to put up with medical supervision, and that you will be equally as pleased as he is when once more he is able to take up the direction of his own affairs. Let him discuss his delusions with you, and try to point out the errors that he makes. It is only after much experience that the physician will know what attitude to adopt in any given case. You can smile at the ideas of one man and even almost joke him out of his fears, while another would deeply resent any such flippancy.

Correction may be necessary in some cases, especially in those patients who do things wilfully, just to annoy fellow-patients or the nurses. The punishment of such persons has frequently been the subject-matter of papers and discussions, the opinion of authorities being divided upon the question. Whatever is done should not, in the opinion of the writer, be done in the form of punishment. The patient must learn that unless he obeys the rules laid down for the

general welfare, exceptional regulations will have to be made to meet his special case. Food should never be limited in the treatment of the vicious, for to put a patient on bread and water is to defeat the ends which the physician has in view. Luxuries and pleasures can be stopped, even with benefit to the individual, apart from any desire to punish.

Patients should be encouraged to employ themselves; and even if they do not feel inclined to read, let them make use of their hands. It must not be forgotten that many persons fail to occupy themselves, not because they do not want to work, but because they cannot keep their attention fixed upon any one thing for more than a moment at a time. As we have already pointed out, inattention is the cause of much inaction, and it is useless to urge patients to work so long as the effort of concentrated attention is too great for them. Light employment, such as helping in the dusting of rooms or similar occupations, is useful in passing time; a conscientious nurse will often succeed in persuading a patient to assist in work of this kind. Outdoor exercise is also good, and is more congenial than indoor occupation in many cases.

The surroundings of the hospital or home should be cheerful, and the nurses of bright disposition. A pleasant environment will often go a long way in helping some patients to get well, as it instils into them new vigour, and gives them the feeling that, after all, life is not all pain and sorrow. There are many persons whose mental disorder is the result of a hard and self-denying life, and to them cheerful surroundings are peace to mind and body. The disposition of circumstances is not everything. Disease is not stayed by comforts and luxury, but we are creatures easily affected by gloom or sunshine, by harshness or by sympathy.

Correspondence.—The question of letter-writing is one that will usually have to be decided by the physician. Some patients will write countless letters; others will not even put pen to paper. To most persons letter-writing is an effort, and accordingly is early given up with any illness. The relatives of the patient are often foolish in urging him to write, thinking that it cannot fail to do him good, and help him to decentralise his thoughts. This error must be corrected, and definite instruction must be given that the patient

need not write letters unless he desires to do so. It is both harmful and painful for a man to sit for hours over a sheet of paper trying to compose a letter, and his ultimate failure is disappointing to him. When a patient recovers, he will soon take a pleasure in once again writing to his friends.

When convalescence is established, it is often advisable to urge an individual to do something, so that he may slowly gain confidence in himself. If he writes under these circumstances, let the correspondence at first be quite short, the letter consisting of a few lines only. As a general rule there is no harm in the friends of a patient writing to him, provided that they are wise in what they write, and that they are careful not to touch upon any worrying topic. It is very harmful for a patient to receive a note filled with distressing details of any domestic or financial difficulties, and such letters have been known to provoke intensely suicidal tendencies.

The ignorance of laymen regarding mental disease is so great that they will often persuade themselves that the patient can get well if he will only try, and they accordingly believe that if they only paint a sad enough picture of the family distress, it will urge the man to shake off his malady. Such persons must be taught that mental disease can no more be removed by an effort of the will than any other illness to which man is heir. With regard to the letter-writing of persons who are under certificates, their correspondence is, to a certain extent, supervised by the physician in whose care the patients are placed. This arrangement is entirely in the interests of the patient, for it is thus possible to stop letters written to business houses or to individuals with whom it is not expedient for him to correspond.

The limits of these supervisionary powers are defined in the Lunacy Act 1890; letters addressed to certain persons have to be forwarded unopened. For the convenience of the reader, a copy of the section of the Lunacy Act relating to the correspondence of patients is here appended.

'Sect. 41 Lunacy Act 1890

'(1) The manager of every institution for lunatics, and every person having charge of a single patient, shall forward

unopened all letters written by any patient and addressed to the Lord Chancellor, or any Judge in Lunacy, or to a Secretary of State, or to the Commissioner, or any Commissioners, or to the person who signed the order for the reception of the patient, or on whose petition such order was made, or to the Chancery Visitors or any Chancery Visitor, or to any visitor or visitors, or to the visiting committee or any members of the visiting committee of the institution, in which any patient writing such letters may be, and may also, at his discretion, forward to its address any other letter, if written by a private patient.

'(2) Every manager of an institution for lunatics, and every person having charge of a single patient, who makes default in complying with this obligation imposed on him by this section, shall for each offence be liable to a penalty not exceeding twenty pounds.'

Visits of Friends.—The visiting of a patient by his friends is one of the greatest difficulties the physician has to encounter in the treatment of insanity. In the first place, the vast majority of persons are inclined to treat with suspicion all individuals whose work in life is the care and treatment of the mentally afflicted. Thus advice, that relatives should refrain from visiting a patient, is often misconstrued, and confirms them in their belief that the aim and object of the physician is to get the patient isolated from his friends for his own purposes. This unfortunate distrust renders the proper treatment of the insane very difficult. The feeling of irritation which these baseless suspicions engender in the mind of an assiduous and sympathetic physician is not lessened by the knowledge that far greater kindness and consideration are being bestowed upon the patient than he was receiving in his own home.

Now, visiting may sometimes be beneficial, but more frequently it is harmful. The recovery of some persons, which promises to be rapid during isolation from their home surroundings, is apt to be retarded by visits from their friends. It is only by experience that distinction can be drawn between the case which may be visited with impunity and that which will make greater progress if the home relationship is entirely broken off for some months. When visiting is permitted care must be exercised that it is done wisely, that the patient

is not wearied by long conversations, nor agitated by worrying news. He is unable to work or help his family; it is therefore a great mistake to distress him with troubles which he can neither prevent nor alleviate.

Most people have an idea that they know exactly how to treat the insane; they believe that if only this or that were done a certain cure would result. Now these well-meaning but usually injudicious persons will frequently seize an opportunity when visiting a patient to practise their remedy upon him. The result may be disconcerting to the operator, who finds that the effect on the patient was not exactly what he expected; but this is of small importance compared with the harm done to the patient and the interruption in a favourable recovery which may result from such practices. A wise friend can do much good by his visits, but a foolish one great harm.

Parole.—There is probably nothing so appreciated by a patient as permission to go out walking by himself. In many cases the granting of parole is a most beneficial form of treatment, for it gives a sense of greater liberty, and a feeling that he is trusted and that his word is believed. Many of the insane, and most persons who are convalescing from a mental illness, have a high sense of honour, and if they undertake to obey any imposed conditions they can be relied upon faithfully to fulfil their promise. Indeed, the insane are often more punctilious than the sane in strictly carrying out their pledged word.

Religious Services.—Most of our large institutions have a chaplain especially appointed to conduct the religious services of the hospital or asylum, and in other ways to administer to the spiritual wants of the inmates. It is better for some patients, especially those suffering from certain forms of melancholia, not to attend church services, as they usually increase the agitation. Unless especially contra-indicated, the religious services are often a useful adjunct to the general treatment, and a wise chaplain can do much good in alleviating the mental suffering of some patients.

Special Duties of the Nurses and Attendants.—It is impossible to enter fully into the various duties which the nurses and attendants of the insane are expected to carry out, and

for information on these matters reference must be made to books specially devoted to the subject. Much caution must be exercised in the choice of nurses and attendants, and at all times they should be carefully supervised. Nurses tending the insane require exceptional tact, as they have to exercise certain authority without appearing to do so. They must note any changes in their patient, and report them to the medical attendant. Suicidal or homicidal attempts, however slight, should be reported at once. Careful note must be made of the daily actions of the patient's bowels; the regular passing of urine must not be overlooked, and attention should be drawn at once to cases of retention. When possible, all patients who are acutely ill should have their temperature taken morning and evening; and this is of special importance in cases of general paralysis. All marks, bruises, or other unusual external appearances should be reported. Refusal of food should be noted at once. A refractory patient should not be handled by one nurse; sufficient assistance should always be ready if required in dealing with these cases, for some patients will struggle or fight with one or two nurses, but will give no trouble if other help is at hand. No nurse should be left in charge of an anxious suicidal patient for many hours without being relieved, as the strain of watching these cases is very great.

Drugs.—Drugs, apart from narcotics, hold a similar position in the treatment of mental disease to the administration of medicine in cases of physical disorder. Sound advice and general direction as to how the patient should live must hold the first position in the treatment of most complaints, but drugs are a useful adjunct to the resources of the physician when practising his healing art. There are some medicines which it would be impossible to dispense with in the treatment of certain diseases, but these drugs with a specific action are not numerous. Nevertheless, all physic can be used with effect in the hands of a skilful physician, for just as the patient may place unbounded faith in the power of his medical attendant, similarly the medicine that he prescribes usually becomes endowed with special merits.

The traditional belief in the curative powers of physic is still deeply ingrained in the human mind. With the spread

of general knowledge and education, the public are slowly learning that drugs alone will not heal, but that the physician's advice must also be followed. Nevertheless, the majority of persons consider that it is the medicine that cures, the wisdom of the medical attendant being shown by his acumen in diagnosis and his selection of the appropriate drug. The natural tendency of all tissues to recover is not understood by the lay mind, the physician and his pharmaceutical store being the agents to which they look for relief. Many persons when they are told that they must give up this or that, or in other ways change their mode of living, are far from satisfied with the advice; for they do not want to change their habits, but desire something to counteract their vicious tendencies. Drugs are the outward and visible sign of the physician's mystic powers, and in most instances it is wiser to give something, even if it is only a general tonic; as the man who is taking medicine is always more willing to follow other advice.

This belief in medicine is apt to be forgotten by the medical officers of institutions, and especially by those whose work is in asylums. The use of drugs merely for appearance sake is of course not to be advocated, but there are plenty of remedies the action of which is usually beneficial in bringing about an improvement in the blood or general nutrition of the body. When no specific drugs are indicated, these simpler remedies may be properly employed, as, apart from their immediate effect upon the economy of the organism, they not infrequently act by 'suggestion,' and at least relieve the patient's mind by the knowledge that every effort is being made to promote his recovery.

Again, it is wise to make the treatment of mental disease resemble as closely as possible the treatment of disease in general. It is important that the insane man should regard his condition as one of ordinary illness, which it is in reality, and therefore methods of treatment should be of the kind usually employed.

The first endeavour should be to improve the physical condition of the patient. Iron, arsenic, maltine, malt and cod liver oil, compound syrup of hypophosphites, Easton's syrup, Parrish's food, acids, bitters &c. are all valuable

medicines in the treatment of mental disorder. If the patient is suffering from any definite physical disease, this must be prescribed for, as the mental disorder is not uncommonly only a complication of that physical disease.

Opium and its alkaloids are helpful in the treatment of some forms of insanity, but their usefulness is limited, and their value is apt to be over-estimated. They are contra-indicated in many forms of excitement. At times the administration of opium greatly increases the mental agitation of a patient, while in others it exercises a sedative influence. In some cases of active melancholia, liquor morphinæ bimeconatis will act like a charm; the usual dose is twenty to thirty minims three times a day.

Hyoscin and hyoscyamin are drugs which are largely used by some authorities, but they cannot be strongly recommended. They act by paralysing the nerve-endings in the muscles, and in this way they lessen restlessness in a maniacal patient. To paralyse the muscles does not necessarily allay mental excitement in the individual; it doubtless produces an appearance of rest by preventing violent muscular action, and it confers a period of peace on those with whom the patient is associated. The use of hyoscin or hyoscyamin is invaluable in some acute cases of excitement, where the assistance at hand is insufficient to prevent violence by the patient, or when it is necessary to move a person in a condition of mania into some institution or home. Sometimes it produces sleep, but this is more commonly observed in cases of dementia and chronic insanity than in the more recent forms of mental disorder.

Care must be exercised when a patient is taking hyoscin, and if the doses are at all large he should be kept in bed, as there is danger of syncope if he is allowed to walk about. These drugs produce a marked pallor by causing a contraction of the peripheral arterioles. The pulse and respiration become very slow, the mouth and throat dry, and the patient complains of great thirst. The pupils are greatly enlarged. A somewhat extraordinary symptom, not uncommonly met with in patients who are taking hyoscin, is the terror they evince every time they see the physician who administers it to them. Hallucinations, usually of sight, are

commonly met with in patients who are under the influence of these drugs, and this symptom is especially observed in the more recent cases of insanity, and in persons belonging to the educated classes. Herein lies the solution of the question whether hyoscin and hyoscyamin should be used, and in what cases they should be employed. In recent cases, especially of persons of the higher social grades, these drugs should seldom, if ever, be employed, except in such emergencies as have already been indicated. With chronic insanity it is different, and the administration of a hypodermic dose of hyoscyamin is frequently most beneficial, and more particularly in patients belonging to the lower classes. Duboisin is similar in its action to hyoscin, but seems inferior to the latter in many respects.

Bromide of potassium is useful in some forms of insanity, especially where there is restlessness with depression. The dose has to be a large one. If sixty grains are administered three or four times a day, a patient may sleep peacefully for many hours ; he should be roused for food at periodic intervals. Its effect may be kept up for days with perfect safety.

The principle of drugging violent and excited patients is to be deprecated unless they are confirmed dements, in which case no harm can be done to their nerve-cells ; other methods of restraint, such as seclusion, are preferable. Resort must sometimes be had to hypnotics, even in acute cases, but this is rather for the treatment of sleeplessness than the restraining of excitement, and they should never be continued longer than is absolutely necessary. There are many hypnotics at our disposal, and they vary greatly in strength. Experience teaches us which drugs to use in different cases, but in no instance should any particular hypnotic be used for long ; for even if the illness is a protracted one, it is wiser to change the narcotic from time to time. These various drugs are fully described in the chapter on Sleeplessness, and in the short paragraph on treatment under each form of mental disorder the hypnotics appropriate to that disorder are named.

Baths.—The value of baths in the treatment of mental disease is not fully appreciated in this country. Very few institutions are properly equipped with a full complement of different kinds of baths, each of which has its place in the

treatment of various diseases. We know that the action of the skin is deficient in many forms of insanity, and yet we neglect to benefit by this knowledge, for we fail to employ baths as much as we should.

If there is any truth in the belief that auto-intoxication plays an important part in the production of mental disorder, surely it is wrong not to try to remove some of the poisonous substances by the constant cleansing of the skin. The surface of the body is so large that if the pores are kept free and the sweat glands active, they must in no small degree assist the kidneys and intestines in their work of removing toxic material. There is a peculiar odour about many of the insane, which is readily removed by prolonged baths, proving that the constant application of water does cleanse the sebaceous glands.

Cold baths, when followed by a proper reaction, serve as a general tonic. The *immediate* effect of a warm bath is to diminish the arterial tension, but if the bath is prolonged for some hours the general blood-pressure is raised. For this reason prolonged baths are often very beneficial in the treatment of acute mania and other forms of excitement. The bath probably also acts in a mechanical sort of way, for the weight of the water upon the abdomen causes a constriction of the vessels in the splanchnic area.

A prolonged bath can be given in an ordinary bath, as the lid can be fitted in such a way that the whole bath can be covered, except a small portion which is cut out for the patient's neck. The water should be about body heat to start with, and it will be found to gradually diminish in temperature until after six or seven hours it is about 92° F. When these baths are given the patient should be in the water about half an hour the first day, and the length of time should be daily increased until it reaches a maximum of about six or seven hours. At this limit they should remain for a few days, and then slowly be decreased. The treatment, if proving beneficial, may be carried out for several weeks. The patient should never be left unattended, and food should be administered at regular intervals.

Cold and tepid shower baths, and spinal douches, are also useful in some cases. Turkish baths and vapour baths have also been used with success in the treatment of mental disease.

Some forms of stupor are greatly benefited by a course of Turkish baths. Shower baths should never be given as a punishment. Certain patients, who pass their excreta under them, either from lack of energy to go to the lavatory or in order to annoy the nurses, should be cleansed in cold water in the bath-room, provided they do not become blue and cold during the process. In conclusion, baths will be found most useful in the treatment of insomnia and general restlessness. Some authorities recommend the employment of wet packs in these cases, but there are a great many objections to their use, and their value has probably been over-estimated.

Electrotherapy.—Electricity has not proved to be of much use in the treatment of insanity. The faradic current is employed with benefit in some of the true hysterical cases, and is also beneficial in certain stuporose patients. Electrical currents of high frequency are said to lower the blood-pressure, and may prove useful in the treatment of melancholia.

Hypnotism.—Voisin claims to have cured many patients suffering from insanity by hypnotic suggestion, and successful results are said to have been obtained by other continental authorities. In England and Scotland the employment of hypnotism in the treatment of mental disorder has been far from encouraging, and even experienced physicians have failed to obtain really satisfactory results. On the other hand, hypnosis has proved of great value in overcoming some persistent forms of insomnia, and in this way it can claim to be of use in the prophylactic treatment of insanity. Hypnotic suggestion is reported to have cured many patients suffering from drug habits, such as dipsomania, morphinism, and the like, and has also shown itself to be useful in correcting other vicious habits.

There is no doubt that the difficulty of obtaining the attention of an insane person is the reason why the results obtained from hypnosis are so unsatisfactory. A high degree of concentration of attention is required, and this the insane man cannot give. The time required for the induction of deep hypnosis varies greatly in different persons, and not uncommonly it is necessary to make sixty or seventy attempts before a successful result is obtained.

Convalescence.—One of the greatest trials a physician has

to encounter is the tendency of relatives to remove an insane patient as soon as the acute symptoms of the illness have passed off, and just as convalescence is beginning. The layman believes he can complete the cure, and that further residence in an asylum is bad for the patient, and there are several reasons why he comes to this conclusion. Many persons believe that association with the insane is bad and may produce mental disorder. There is no such thing as contact insanity in this sense; indeed, many of the insane can help each other on the road to recovery. From experience it is beyond doubt that most persons suffering from mental disorder are happier with others similarly affected, than in their own homes. The fact that a man has so far progressed towards recovery that he is considered well enough to be removed shows that the association with other insane persons has not been harmful to him.

Another point is that many of the insane appear much better in institutions than they really are, and relatives begin to think that they made a mistake in sending the patient away from home. Nevertheless, if they remove him, they will soon find out their mistake, as all the acute symptoms quickly return.

The longer and more steadily that convalescence is allowed to progress, the better and more permanent the recovery. There is nothing that will cause a relapse more readily than a premature removal from care, whether this is being effected in a private house or in an asylum. Relatives should fully consider the seriousness of the step before carrying it into execution. Patients will often beg to be taken away, saying that if only they were removed home, or to some other place, they would soon be well. It is very wrong to submit to dictation by the patient, and to assent to his request is no true kindness, for it risks his chance of recovery.

It is grievous to think of the number of persons who become chronically insane owing to ignorance and want of decision on the part of their relatives. If a phthisical patient were told by his medical attendant that he ought to live in a certain place or follow a certain treatment, all the relatives of that man would do their best to see that these instructions were carried out. Why should they be unwilling to obey the

advice of the same physician when the malady is a mental and not a physical one? The reason is not far to seek; it is because everybody believes that he knows insanity when he sees it, and unless the man is breaking up the home, singing, shouting, and hostile to his neighbours, in their estimation he is not insane, and should not be deprived of his liberty. It is sad to think that the patient must suffer for the folly of his friends, and it is incumbent upon the physician to state clearly the risks that are being run, and to impress upon the relatives the responsibility that lies upon them.

To conclude, the physician who undertakes the treatment of the mentally afflicted, and carries it out with thoroughness and zeal, will be amply rewarded. A visit to one of our large county asylums may take the heart out of the most optimistic, for in truth they are filled with degenerate humanity. Such a sight may be depressing, but medical science would not stand where it does to-day if our predecessors had despaired in the face of a seemingly overwhelming task.

Much more can be done in the way of prophylaxis than has been attempted in the past, if only the public will awaken to the fact and take a reasonable view of insanity. Again, the early treatment of slight forms of mental disorder would prevent many persons from becoming definitely insane. Attention to these two points alone would go far towards reducing the number of fresh cases of insanity.

Notwithstanding the excellent work which has already been done in psychological medicine, we stand but upon the threshold, and there is no branch of medicine which affords greater potentialities for the student.

INDEX

Accidents, as cause of general paralysis, 212
Accusations, false, 76, 173, 339, 341
Action, 11
Acute delirious mania, 96, 104
Acute hallucinatory insanity, 248
  ætiology of, 248
  mental symptoms of, 248
  physical symptoms of, 249
  treatment of, 250
Æsthetic sentiment, disorders of, 69
Affection, 3
Agorophobia, 281
Albuminuria, 81
Alcohol, as cause of insanity, 32
  in crime, 356
    treatment, 419
Alcoholic intoxication, acute, 186
  insanity, 184
    chronic, 192
      physical symptoms, 195
      diagnosis of, 197
  pseudo-general paralysis, 192
  insanity, morbid anatomy of, 199
  persons, restrictions of, 406, 408
Alcoholism, 184
  chronic, 190
  as a cause of idiocy, 314
Alternating insanity, 289, 301, 302
Amnesia, 9, 66
  effect on testamentary capacity, 194
Anæsthesia, 83
Analgesia, 83
Anergic stupor, 123
Aortic disease and insanity, 303
Aphasia, testamentary capacity in, 369
Apoplectiform seizures in general paralysis, 224
Arterial tension in the insane, 78
Asylum, choice of, 414
Atavism, 27
Attention, 3
  disorders of, 4, 64
  in hysteria, 266
  in idiocy, 317
Auditory hallucinations, 55
Aura, epileptic, 254
Automatism in epilepsy, 255, 256

Babinski's sign, 269
Bath, prolonged, 441
  shower, 441
Baths, 440
Bed-sores, 84
Belief, 14
Blood-pressure in the insane, 78
Boarders, voluntary, 414
Body temperature in general paralysis, 224
Bones in general paralysis, 227
Brain hypochondriasis, 113
  syphilis, 308
Bromide of potassium, 380, 440

Case-taking, 384
Catamenia, 81
Catatonia, 128
Catatonic form of dementia præcox, 148, 150, 153
Causation of insanity, 26
Certificates, forms of medical, 404
  signing of, 390, 391
Chloral hydrate, 380
Cholin in general paralysis, 236
Chorea and insanity, 292
Chronic insanity, 146
Circular insanity, 91, 108
Civil liability of the insane, 357
Classification of insanity, 38
Climacteric insanity, 170
  mental symptoms of, 172
  physical symptoms of, 173
  prognosis of, 174
  treatment of, 174
Cocainism, 206
Communicated insanity, 141
Conation, 5
Conduct in idiocy, 321
Confusional insanity, acute, 248
Constipation, 29, 82
  treatment of, 421
Contractures, functional, 269
Convalescence, treatment during, 442
Convulsions as a cause of idiocy, 315
  in general paralysis, 223
Correspondence, 433
Cousins, marriage of, 28

Cretinism, 298
Cretinoid idiocy, 329
Crime and insanity, 354

Delirium tremens, 187
Delusional insanity, chronic, 131
ætiology of, 135
varieties of, 135
mental symptoms of, 136
physical symptoms of, 142
diagnosis of, 143
treatment of, 144
Delusions, 59
classification of, 61
Dementia paralytica, 209
Dementia præcox, 146
varieties of, 148
mental symptoms of, 148
course of, 152
diagnosis of, 153
Dementia, primary, 123
secondary, 156
organic, 160
Depression, states of, 106
Destructiveness, 430
Diabetes and insanity, 289
Diathesis, insane, 36
Diet of the insane, 418
Dipsomania, 198
Dissolution, mental, 34
Doubt, 282
Dream states, 17
Drugs in treatment, 437

Echolalia, 129
Eclampsic idiocy, 328, 334
Education, 30
of idiots, 335, 336
Effort, feeling of, 5
Electro-therapy, 442
Emotions, 7
disturbances of, 67
in idiocy, 319
Epilepsy and insanity, 252
varieties of insanity associated with, 253
masked, 255
pathology and morbid anatomy of, 260
Epileptic aura, 254
Epileptic automatism, 255, 256
furor, 256
idiocy, 253, 328, 334
insanity, chronic, 257
Epileptiform convulsions in general paralysis, 223
Epochal insanities, 163
Evolution, mental, 33
Exaltation, 68
Excitement, states of, 90
Exercise, 423
Exhaustion psychoses, 243
Exophthalmos, 87
Expression in the insane, 86
in idiocy, 325
Eyes, movement of, 87

False accusations in insanity, 76, 173, 339, 341
in epilepsy, 254
Fatigue, 75
Fears, morbid, 281
Feeding, forcible, 419
Feigned insanity, 343
treatment of, 349
Fidgets, 11
Flexibilitas cerea, 129
Folie à deux, 141
Folie circulaire, 91, 108
Forcible feeding, 419
Fright to mother as a cause of idiocy, 315
Functional contractures, 269

Gait in general paralysis, 222
Gastro-intestinal hypochondriasis, 113
General hypochondriasis, 114
General paralysis of the insane, 209
prodromal stage of, 213
mental symptoms of, 213, 215
physical symptoms of, 220
diagnosis of, 229
relation to tabes dorsalis, 231
pathology and morbid anatomy of, 232
treatment of, 240
juvenile, 227
pupillary defects in, 220
remissions in, 228
syphilis as a cause of, 210
Genetous idiocy, 326, 333
Glycosuria and insanity, 289
Gout and insanity, 301
Gustatory hallucinations, 56

Habits, 6, 69
Hæmatoma auris, 84
Hæmatoporphyrinuria, 382
Hallucinations, 52
theories as to causation of, 57
Hallucinatory insanity, acute, 248
Handwriting in the insane, 88
in general paralysis, 222
in idiocy, 325
Head-injury as cause of general paralysis, 212
Heart disease and insanity, 303
and vascular system, 78
Hebephrenic form of dementia præcox, 148, 149, 152

Heredity, 27
Homicide, 73, 355, 430
Houses, treatment in licensed, 414
Huntington's chorea, 293
Hydrocephalic idiocy, 327, 333
Hyoscin, in treatment, 382, 424, 439
Hyperæsthesia, 83
Hyperattention, 4
Hypermnesia, 10, 67
Hyperpyrexia, 86
Hypertrophic idiocy, 327, 334
Hypnosis in treatment of imperative ideas, 285
Hypnotics, 379
Hypnotism, 442
Hypochondriacal melancholia, 109, 112, 113
Hysteria and insanity, 264
  ætiology of, 264
  mental symptoms of, 265
  physical symptoms of, 267
  disordered sensations in, 268
  diagnosis of, 270
  treatment of, 271
Hystero-epilepsy, 272

Ideas, 5
  association of, 6
Idiocy and imbecility, 313
  ætiology of, 314
  mental phenomena in, 316
  physical symptoms in, 322
  varieties of, 326
  diagnosis of, 330
  morbid anatomy of, 331
  treatment of, 334
Idiocy from deprivation of senses, 330
Illusions, 52
Imagination, 10
Imbecility, 313
Imperative ideas, 279
  ætiology of, 280
  varieties of, 280
  mental symptoms associated with, 280
  treatment of, 284
Impotence, ideas of, 113
Impulsive acts, 12, 67
Inattention, 4
Incoherence, 84
Infanticide, dangers of, 165, 167
Inflammatory idiocy, 329
Influenza and insanity, 289
Inheritance, law of, 27
Injuries, cause of general paralysis, 212
Inquisitiveness, 282
Insane ear, 84
Insanity, what is, 19
  classification of, 38
Insanity, causation of, 26
  and physical diseases, 286
Insomnia, 371
  causation of, 373
  treatment of, 374
Intoxication psychoses, 184

Jealousy, 76
Judgment, 13
Judicial authority, 392
Juvenile general paralysis, 227

Kinæsthesis, 14
Kleptomania, 340
Knee-jerks, 86
  in general paralysis, 223
  in hysteria, 268
Kraepelin, classification of insanity, 43
Krafft-Ebing, classification of insanity, 41

Lactation, insanity of, 164, 166, 168
Law in relation to insanity, 350
Lead poisoning and insanity, 207
Legal responsibility, 352
Letter-writing of the insane, 433
Lochia in puerperal insanity, 167, 169
Locomotor ataxy and general paralysis, 231
Lucid interval, 366

Malaria and insanity, 304
Malingering, 343
Mania, acute delirious, 96, 104
Mania, 90
  mental symptoms of, 93
  physical symptoms of, 97
  course of, 98
  diagnosis of, 100
  prognosis of, 101
  pathology of, 101
  treatment of, 102
  varieties of, 91
  muscular system in, 98
  movements in, 98
  recurrent, 96
Mania a potu, 189
Manic-depressive insanity, 96, 108
Marriage of first cousins, 28
  contract by insane person, 360
Massage, 418
Masturbation, 33, 70
Maudsley, classification of insanity, 39
Mechanical restraint, 424
Medico-legal aspect of senile insanity, 177
Melancholia, 106
  varieties of, 108
  mental symptoms of, 109
  physical symptoms of, 115

Melancholia, diagnosis of, 117
prognosis of, 118
pathology of, 119
treatment of, 120
agitated, 96
recurrent, 109, 114
recurrent simple, 108
Memory, 8
disorders of, 9, 66
in general paralysis, 215
in idiocy, 317
Meningo-encephalitis, chronic, 233
Menstruation, 81
Microcephalic idiocy, 326, 333
Microkinesis, 11
Mirror-writing, 89, 325
Mitral disease and insanity, 303
Mongolian idiocy, 326
Monomania, 134
Moral insanity, 337
diagnosis of, 340
treatment of, 342
Moral treatment in insanity, 430
sense in idiocy, 320
Morphinism, 202
mental symptoms of, 203
treatment of, 204
Motor disturbances in hysteria, 268
Movement, 11, 77
stereotyped, 129
Muscular element of thought, 65
Mutilation, self-, in hysteria, 266
Mutism, 85, 129
Myxœdema and insanity, 295

Nasal feeding, 419
Nerve-cells, degeneration of, 239
Neurasthenia, 243
ætiology of, 243
mental symptoms of, 244
physical symptoms of, 245
diagnosis of, 246
treatment of, 247
Neuroses, general, 252
Neurotic children, education of, 409
Night terrors, 373
Nurses, special duties of, 436
Nutritional changes, 83

Object-consciousness, 14, 64
Obsessional insanity, 279
Oculo-motor symptoms in general paralysis, 220
Œsophageal feeding, 420
Olfactory hallucinations, 56
Onanism, 70
Opium, 382, 439
Organic psychoses, senile, 179
Othæmatoma, 84
Over-work, 29

Paralytic idiocy, 328, 334
Paramnesia, 10, 67
Paranoia, 131
varieties of, 135
mental symptoms of, 136
physical symptoms of, 142
diagnosis of, 143
treatment of, 144
Paranoid form, dementia præcox, 148, 151, 153
Parole, 436
Passion, 7
Perception, 5
Perspiration, 80
Phthisis and insanity, 286
Physical disease, as cause of insanity, 33
Physical diseases and insanity, 286
Plumbism, 207
Porencephaly, 332
Post-epileptic automatism, 255, 256
states, 255
Posture, 87
Pre-epileptic insanity, 254
Pregnancy, insanity of, 164, 167, 168
Premature labour, induction of, 165
Primary dementia, 123
Private asylums, 414
Puerperal insanities, 163
insanity, 165, 167, 168
Pupillary defects in general paralysis, 220
Pyrexia in the insane, 85
Pyromania, 339, 341

Reaction times, 15
Reasoning, 13
Reception order, 392
Recurrent insanity, 91, 107, 114
Reflex disorders, 86
Reflexes in general paralysis, 223
Religion, as cause of insanity, 31
Religious services, 436
Remissions in general paralysis, 228
Respiratory system, 80
Responsibility, in the insane, civil, 357
criminal, 354
Rest, in treatment, 417
Restlessness, 75
Restraint, mechanical, 424
Rheumatic fever and insanity, 302
Rhythm, 6

Salivation, 81
Sanguinity, law of, 28
Savage, classification of insanity, 40
Sclerosis of the brain in idiocy, 331
Seclusion, 423
Secretory disorders, 80
Seizures in general paralysis, 223

Self-consciousness, 14, 64
Self-mutilation in hysteria, 266
Senile insanity, 175
varieties of, 176
mental symptoms of, 176
medico-legal aspect, 177
physical symptoms of, 180
pathology of, 182
mania, 177
melancholia, 177
Sensation, 2
disorders of, 82
in general paralysis, 225
in idiocy, 329, 334
Sensory disturbances in hysteria, 268
Sentiment, 7
Sex, in ætiology of insanity, 33
Sexual excess, 32
hypochondriasis, 113
Sexual malpractices, 33, 70
Single patients, 416
Sleeplessness, 371
causation of, 373
treatment of, 374
Somnambulism, 373
Speech-defects in general paralysis, 221
in the insane, 84
in idiots, 324
Spinal form of general paralysis, 218, 222
Stereotyped movements, 129
Stupor, 123
varieties of, 123
mental symptoms of, 124
physical symptoms of, 125
diagnosis of, 126
treatment of, 127
Subject-consciousness, 14, 64
Suicide, 71, 388
treatment of, 428
Sulphonal, 381
poisoning, 381
Summary reception orders, 393, 394
Sunstroke and insanity, 303
as a cause of general paralysis, 213
Symbolism, 141
Symptomatology, general, 49
Syphilis as a cause of insanity, 32
of general paralysis, 210
of idiocy, 314
Syphilis and insanity, 304
congenital, 307
Syphilitic idiocy, 329, 334
Syphilitic insanity, diagnosis of, 309
prognosis of, 309
morbid anatomy of, 309
treatment of, 311
Syphilophobia, 306

Tabes dorsalis in relation to general paralysis, 231
Tabetic form of general paralysis, 218, 222
Tactual hallucinations, 57
Temperament, 35
Temperature in general paralysis, 224
in the insane, 85
Testamentary capacity in the insane, 361
Thought, muscular element of, 65
Traumatic idiocy, 328
Traumatic neuroses, 273
ætiology of, 274
mental symptoms of, 276
physical symptoms of, 276
prognosis of, 277
diagnosis of, 278
treatment of, 278
Travelling, 411, 412
Treatment, 405
preventive, 406
curative, 412
Tremors in general paralysis, 222
Trional, 382
Trophic disorders, 83
Tumour of brain and insanity, 160

Unsoundness of mind, 414
Urgency certificate, 390
form of, 402
Urine in the insane, 81

Verbigeration, 85, 129
Violence, 423
Visits of friends, 435
Visual disturbances in hysteria, 268
hallucinations, 56
Voluntary action, 11
boarder, 414

Weber's law, 3
Will, disorders of, 13
Wills, 361

Ziehen, classification of insanity, 42

PRINTED BY
SPOTTISWOODE AND CO. LTD., NEW-STREET SQUARE
LONDON

No. 3.

DECEMBER, 1907.

J. & A. CHURCHILL

Recent Works for Students and Practitioners of Medicine.



LONDON:

7, Great Marlborough Street.

INDEX.

PAGE

2 Anatomy. Physiology.

3 Materia Medica. Pharmacy.

4 Hygiene. Bacteriology.

5 Pathology. Psychology. Dictionaries.

6 Medicine.

7 Medicine.

8 Surgery.

9 Surgery. Anæsthetics.

10 Neurology. Urinary Disorders.

11 Midwifery. Gynæcology. Medical Jurisprudence.

12 Ophthalmology.

13 Otology. Pædiatrics. Dentistry.

14 Tropical Diseases. Dermatology.

15 Chemistry. Physics.

16 Microscopy. Miscellaneous.

FREE ON . . . APPLICATION.

1. Complete Catalogue.
2. Catalogue of Science Books.

Anatomy & Physiology

A Treatise on Human Anatomy. By various Authors. Edited by HENRY MORRIS, M.A., F.R.C.S., President of the Royal College of Surgeons, England; Consulting Surgeon to the Middlesex Hospital, and J. PLAYFAIR MCMURRICH, A.M., Ph.D., Professor of Anatomy, University of Toronto. Fourth Edition. With 1025 Engravings, of which 319 are printed in 3 or 4 colours. Royal 8vo, 30*s.* net. Also issued in 5 parts. Parts I, II, and III, 8*s.* net each; and Parts IV and V, 5*s.* net each.

Anatomical Terminology, with Special Reference to the B.N.A. By LLEWELLYS F. BARKER, M.D., Professor of Medicine, Johns Hopkins University, Baltimore. With Illustrations and 2 Coloured Plates. 5*s.* net.

A Manual of Practical Anatomy. By the late Professor ALFRED W. HUGHES, M.B., M.C.Edin., Professor of Anatomy, King's College, London. Edited and completed by ARTHUR KEITH, M.D., Lecturer on Anatomy, London Hospital Medical College. In three parts, Part I, 10*s.* 6*d.* Part II, 8*s.* 6*d.* Part III, 10*s.* 6*d.*

Heath's Practical Anatomy: a Manual of Dissections. Edited by J. E. LANE, F.R.C.S., Surgeon and Lecturer on Anatomy at St. Mary's Hospital. Ninth Edition. 321 Engravings. 12*s.* 6*d.*

Clinical Applied Anatomy; or, The Anatomy of Medicine and Surgery. By CHARLES R. BOX, M.D., F.R.C.P.Lond., Physician to Out-patients, St. Thomas's Hospital, and W. MCADAM ECCLES, M.S.Lond., F.R.C.S.Eng., Assistant Surgeon, St. Bartholomew's Hospital. Illustrated by 45 Plates, of which 12 are coloured, and 6 Figures in the Text. 12*s.* 6*d.* net.

Essentials of Surface Anatomy. By CHARLES R. WHITTAKER, L.R.C.S., L.R.C.P., etc., Demonstrator of Anatomy, Surgeons' Hall, Edinburgh. 2*s.* 6*d.* net.

Text-Book of Anatomy for Nurses. By ELIZABETH R. BUNDY, M.D., Member of the Medical Staff of the Woman's Hospital of Philadelphia. With a Glossary and 191 Illustrations, 34 of which are printed in colours. 7*s.* 6*d.* net.

Human Osteology. By LUTHER HOLDEN. Eighth Edition. Edited by CHARLES STEWART, F.R.S., and ROBERT W. REID, M.D., F.R.C.S. 59 Lithographic Plates and 74 Engravings. 16*s.*

BY THE SAME AUTHOR.

Landmarks, Medical and Surgical. Fourth Edition. 3*s.* 6*d.*

Elements of Human Physiology. By ERNEST H. STARLING, M.D., F.R.C.P., F.R.S., Jodrell Professor of Physiology in University College, London. Eighth Edition. 323 Illustrations. 12*s.* 6*d.* net.

Practical Physiological Chemistry. By PHILIP B. HAWK, M.S., Ph.D., Demonstrator of Physiological Chemistry in the University of Pennsylvania. With Coloured Plates and 126 Figures. 16*s.* net.

Physiological Chemistry. A Text-book for Students and Practitioners. By CHARLES E. SIMON, M.D., late Resident Physician, Johns Hopkins Hospital, Baltimore. Second Edition. 14*s.* net.

Materia Medica & Pharmacy

A Text-Book of Materia Medica for Students of Medicine. By C. R. Marshall, M.D., Professor of Materia Medica and Therapeutics in the University of St. Andrews. 127 Illustrations. 10*s.* 6*d.* net.

Materia Medica, Pharmacy, Pharmacology, and Therapeutics. By W. Hale White, M.D., F.R.C.P., Physician to, and Lecturer on Medicine at, Guy's Hospital. Tenth Edition. 6*s.* 6*d.* net.

Southall's Organic Materia Medica. Edited by John Barclay, B.Sc.Lond. Sixth Edition. 7*s.* 6*d.*

An Introduction to the Study of Materia Medica. By Henry G. Greenish, F.I.C., F.L.S., Professor of Pharmaceutics to the Pharmaceutical Society. 213 Illustrations. 15*s.*

BY THE SAME AUTHOR.

The Microscopical Examination of Foods and Drugs, in the Entire, Crushed, and Powdered States. 168 Illustrations. 10*s.* 6*d.* net.

ALSO, WITH EUGENE COLLIN.

An Anatomical Atlas of Vegetable Powders. 138 Illustrations. 12*s.* 6*d.* net.

Practical Pharmacy. By E. W. Lucas, F.I.C., F.C.S. 283 Illustrations. 12*s.* 6*d.*

The National Standard Dispensatory. By H. A. Hare, B.Sc., M.D., and others. 478 Illustrations. 31*s.* 6*d.* net.

Medical and Pharmaceutical Latin for Students of Pharmacy and Medicine. By Reginald R. Bennett, Pharmacist and Teacher of Pharmacy at University College Hospital, London. 6*s.* net.

A Companion to the British Pharmacopœia. By Peter Wyatt Squire, F.L.S., F.C.S. Seventeenth Edition. 12*s.* 6*d.* Pocket Edition, 7*s.* 6*d.* net.

The Pharmaceutical Formulary: a Synopsis of the British and Foreign Pharmacopœias. By Henry Beasley. Twelfth Edition by J. Oldham Braithwaite. 6*s.* 6*d.*

The Book of Prescriptions (Beasley) with an Index of Diseases and Remedies. Rewritten by E. W. Lucas, F.I.C., F.C.S. Ninth Edition. 6*s.* net.

BY THE SAME AUTHOR.

The Book of Receipts: containing a Veterinary Materia Medica, with Prescriptions illustrating the Employment of Drugs in General Use for the Treatment of the more Common Ailments of Animals; comprising also a Pharmaceutical Formulary for the Manufacture of Proprietary Articles, Toilet Preparations, Dietetic Articles, Household Specialities, etc. A Photographic Formulary. A Synopsis of Practical Methods employed in the Examination of Urine, Milk, Potable Waters, Sputum, etc., together with numerous Chemical and other Tables likely to be of use to Pharmacists and Manufacturers. (The Eleventh Edition of Beasley's Book.) With 10 Plates. 7*s.* 6*d.* net.

Tuson's Veterinary Pharmacopœia. Sixth Edition. Edited by James Bayne, F.C.S. 7*s.* 6*d.* net.

Year-Book of Pharmacy. Annually, 10*s.*

Hygiene & Bacteriology

The Theory and Practice of Hygiene. By J. Lane Notter, M.D., late Professor of Hygiene in the Army Medical School; and W. H. Horrocks, M.B., B.Sc., Assistant Professor of Military Hygiene in the Staff Medical College. Second Edition. 15 Plates and 134 other Illustrations. 25*s.*

Manual of Hygiene. By W. H. Hamer, M.D., Lecturer on Public Health, St. Bartholomew's Hospital; Assistant Medical Officer of Health of the County of London. 93 Illustrations. 12*s.* 6*d.* net.

A Handbook of Hygiene and Sanitary Science. By Geo. Wilson, M.A., M.D., Medical Officer of Health for Mid-Warwickshire. Eighth Edition. Illustrated. 12*s.* 6*d.*

The Effects of Borax and Boric Acid on the Human System. Third Treatise. With Diagrams. By Dr. Oscar Liebreich. 5*s.* net.

A Simple Method of Water Analysis. By John C. Thresh, M.D.Vic., D.Sc.Lond. Fifth Edition. 2*s.* 6*d.*

BY THE SAME AUTHOR.

The Examination of Waters and Water Supplies. 19 Plates and 11 Figures in the Text. 14*s.* net.

ALSO, WITH ARTHUR E. PORTER, M.D., M.A.CANTAB.

Preservatives in Food and Food Examination. 8 Plates. 14*s.* net.

Foods and their Adulteration: Origin, Manufacture, and Composition of Food Products; Description of Common Adulterations, Food Standards, and National Food Laws and Regulations. By Harvey W. Wiley, M.D., Ph.D. With 11 Coloured Plates and 86 other Illustrations. 21*s.* net

A Manual of Bacteriology, Clinical and Applied. By Richard T. Hewlett, M.D., Professor of General Pathology and Bacteriology in King's College, London. Second Edition. 20 Plates and 66 Figures in the Text. 12*s.* 6*d.*

BY THE SAME AUTHOR.

Serum Therapy, Bacterial Therapeutics, and Vaccines. 20 Figures. 5*s.* net.

Clinical Diagnostic Bacteriology, including Serum- and Cyto-diagnosis. By Alfred C. Coles, M.D., D.Sc., F.R.S.E. 2 Coloured Plates. 8*s.* net.

A Text-Book of Bacteriology. By G. M. Sternberg, M.D. Second Edition. 9 Plates and 198 Figures in the Text. 26*s.*

An Introduction to the Bacteriological Examination of Water. By W. H. Horrocks, M.B., B.Sc.Lond. 10*s.* 6*d.*

Lessons in Disinfection and Sterilisation. By F. W. Andrewes, M.D., F.R.C.P., Lecturer on Pathology, St. Bartholomew's Hospital. Second Edition. 31 Illustrations. 3*s.* 6*d.* net.

Pathology & Psychology Dictionaries

Pathology, General and Special, for Students of Medicine. By R. Tanner Hewlett, M.D., F.R.C.P., D.P.H., Professor of General Pathology and Bacteriology in King's College, London. 31 Plates and 13 Illustrations in Text. Second Edition. 10*s.* 6*d.* net.

A Manual of General or Experimental Pathology, for Students and Practitioners. By W. S. Lazarus-Barlow, M.D., F.R.C.P., Director of the Cancer Research Laboratories, Middlesex Hospital, Second Edition. 21*s.* net.

BY THE SAME AUTHOR.

The Elements of Pathological Anatomy and Histology for Students. 24*s.* net.

Surgical Pathology and Morbid Anatomy. See page 8.

The Pathologist's Handbook: a Manual for the Post-mortem Room. By T. N. Kelynack, M.D. 126 Illustrations. Pegamoid, 4*s.* 6*d.*

Psychological Medicine. By Maurice Craig, M.A., M.D., F.R.C.P., Physician and Lecturer on Mental Diseases, Guy's Hospital. 22 Plates. 12*s.* 6*d.* net.

Mental Diseases: Clinical Lectures. By T. S. Clouston, M.D., F.R.C.P.Edin., Lecturer on Mental Diseases in the University of Edinburgh. Sixth Edition. 30 Plates. 14*s.* net.

The Force of Mind; or, the Mental Factor in Medicine. By Alfred T. Schofield, M.D., Hon. Physician to Friedenheim Hospital. Third Edition. 5*s.* net.

BY THE SAME AUTHOR.

Unconscious Therapeutics; or, The Personality of the Physician. Second Edition. 5*s.* net.

ALSO

The Management of a Nerve-Patient. 5*s.* net.

The Journal of Mental Science. Published Quarterly, by Authority of the Medico-Psychological Association. 5*s.*

Dictionary of Medical Terms: English, French, German. Edited by Paul Blaschke. 8*s.* net.

Dictionary of Medical Conversation; English- German, 4*s.* net. German-English, 4*s.* net.

A German-English Dictionary of Terms used in Medicine and the Allied Sciences. By Hugo Lang, B.A., and Bertram Abrahams, M.B., B.Sc., F.R.C.P. 15*s.* net.

Dunglison's Dictionary of Medical Science. By Thomas L. Stedman, M.D. Twenty-third Edition. 577 Illustrations, including 84 page-plates. 34*s.* net.

A Medical Vocabulary. By R. G. Maine, M.D., LL.D. Seventh Edition, by W. W. Wagstaffe, B.A., F.R.C.S., and G. D. Parker, M.B. 12*s.* 6*d.*

Medicine

A Text-Book of Medicine. Begun by the late C. Hilton Fagge, M.D.; completed and re-written by P. H. Pye-Smith, M.D., F.R.S. Fourth Edition. 2 vols. 42*s*.

Manual of the Practice of Medicine. By Frederick Taylor, M.D., F.R.C.P., Physician to, and Lecturer on Medicine at, Guy's Hospital. Seventh Edition. Illustrated. 15*s*. net.

A System of Clinical Medicine for Practitioners and Students. By Thos. D. Savill, M.D., M.R.C.P. In 2 vols. 4 Coloured Plates, and 286 Figures in the Text. Vol. I: Local Diseases and Pyrexial Disorders, 12*s*. 6*d*. net; Vol. II: Diseases of the Skin, the Nervous System, etc., 8*s*. 6*d*. net.

A Short Practice of Medicine. By Robert A. Fleming, M.A., M.D., F.R.C.P.E., F.R.S.E., Lecturer on Practice of Medicine, School of the Royal Colleges, Edinburgh; Assistant Physician, Royal Infirmary, Edinburgh. Illustrated, partly in colour. 10*s*. 6*d*. net.

The Practice of Medicine. By M. Charteris, M.D., Professor of Therapeutics and Materia Medica in the University of Glasgow. Eighth Edition. Edited by F. J. Charteris, M.B., Ch.B. Illustrated. 10*s*.

Student's Guide to Medical Diagnosis. By Samuel Fenwick, M.D., F.R.C.P., and W. Soltau Fenwick, M.D., B.S. Ninth Edition. 139 Engravings. 9*s*.

Text-Book of Medical Treatment (Diseases and Symptoms). By Nestor I. C. Tirard, M.D., F.R.C.P., Professor of the Principles and Practice of Medicine, King's College, London. 15*s*.

A Manual of Family Medicine and Hygiene for India. Published under the Authority of the Government of India. By Sir William J. Moore, K.C.I.E., M.D. Seventh Edition edited by Major J. H. Tull Walsh, I.M.S. 70 Engravings. 6*s*. net.

Waring's Bazaar Medicines of India. By Lt.-Col. C. P. Lukis, I.M.S., Principal of the Medical College, Calcutta. Sixth Edition. 6*s*. net.

The Blood: how to Examine and Diagnose its Diseases. By Alfred C. Coles, M.D., D.Sc., F.R.S.Edin. Third Edition. 7 Coloured Plates. 10*s*. 6*d*. net.

Lectures on Medicine to Nurses. By Herbert E. Cuff, M.D., F.R.C.S., late Medical Superintendent, North-Eastern Fever Hospital, London. Fifth Edition. 29 Illustrations. 3*s*. 6*d*. net.

How to Examine the Chest. By Samuel West, M.D., F.R.C.P., Physician to St. Bartholomew's Hospital. Third Edition. 46 Engravings. 5*s*.

Medicine

Ulcer of the Stomach and Duodenum. By Samuel Fenwick, M.D., F.R.C.P., and W. Soltau Fenwick, M.D., B.S. 55 Illustrations. 10*s.* 6d.

BY THE SAME AUTHORS.

Cancer and other Tumours of the Stomach. 70 Illustrations. 10*s.* 6*d.*

On Carbohydrate Metabolism, with an Appendix on the Assimilation of Carbohydrate into Proteid and Fat, followed by the Fundamental Principles and the Treatment of Diabetes dialectically discussed. By Frederick W. Pavy, M.D., LL.D., F.R.S., F.R.C.P., Consulting Physician to Guy's Hospital. With 8 Plates. 6*s.* net.

The Schott Methods of the Treatment of Chronic Diseases of the Heart, with an account of the Nauheim Baths, and of the Therapeutic Exercises. By W. Bezly Thorne, M.D., M.R.C.P. Fifth Edition. Illustrated. 5*s.* net.

The Clinical Examination of Urine, with an Atlas of Urinary Deposits. By Lindley Scott, M.A., M.D. 41 original Plates (mostly in colours). 15*s.* net.

Urinary Examination made easy. By T. Carruthers, M.B., Ch.B. 1*s.* 6*d.* net.

Some Disorders of the Spleen. By Frederick Taylor, M.D., F.R.C.P., Physician to, and Lecturer on Medicine at, Guy's Hospital. 3*s.* net.

Rational Organotherapy, with Reference to Urosemiology. Translated from the Russian Text by Professor Dr. A. von Poehl, Professor Prince J. von Tarchanoff, Dr. Alf von Poehl, and Dr. P. Wachs. Vol. I. 7*s.* 6*d.* net.

On Gallstones, or Cholelithiasis. By E. M. Brockbank, M.D.Vict., M.R.C.P.Lond., Honorary Physician to the Ancoats Hospital, Manchester. 7*s.*

Obstinate Hiccough: the Physiology, Pathology, and Treatment. By L. F. B. Knuthsen, M.D.Edin. 6*s.*

On Syphonage and Hydraulic Pressure in the Large Intestine, with their Bearing upon the Treatment of Constipation, Appendicitis, etc. By Ralph Winnington Leftwich, M.D. 3*s.* net.

Uric Acid as a Factor in the Causation of Disease. By Alexander Haig, M.D., F.R.C.P., Physician to the Metropolitan Hospital. Sixth Edition. 75 Illustrations. 15*s.*

BY THE SAME AUTHOR.

Uric Acid, an Epitome of the Subject. Second Edition. 2*s.* 6*d.* net.

ALSO

Diet and Food considered in relation to Strength and Power of Endurance, Training, and Athletics. Sixth Edition. 2*s.* net.

Surgery

The Operations of Surgery. By W. H. A. Jacobson, M.Ch.Oxon., F.R.C.S., Consulting Surgeon Guy's Hospital, and R. P. Rowlands, M.S.Lond., F.R.C.S., Assistant Surgeon, Guy's Hospital. Fifth Edition. 2 vols. 777 Illustrations. 42*s.* net.

Surgery: its Theory and Practice. By William J. Walsham, F.R.C.S., Surgeon to St. Bartholomew's Hospital. Ninth Edition, by W. G. Spencer, F.R.C.S., Surgeon to the Westminster Hospital. 620 Engravings (including 24 Skiagrams). 18*s.* net.

The Operative Surgery of Malignant Disease. By Henry T. Butlin, F.R.C.S., Surgeon to St. Bartholomew's Hospital. Second Edition. 12 Engravings. 14*s.*

Surgical Pathology and Morbid Anatomy. By Anthony A. Bowlby, F.R.C.S., Surgeon to St. Bartholomew's Hospital, assisted by F. W. Andrewes, M.D., Lecturer on Pathology, St. Bartholomew's Hospital. Fifth Edition. 196 Engravings. 10*s.* 6*d.* net.

A Manual of Surgical Diagnosis. By James Berry, B.S.Lond., F.R.C.S., Surgeon to, and Lecturer on Surgery at, the Royal Free Hospital. 6*s.* net.

A Synopsis of Surgery. By R. F. Tobin, Surgeon to St. Vincent's Hospital, Dublin. Second Edition. Interleaved, leather binding. 6*s.* 6*d.*

On Diseases of the Rectum and Anus, including the Fifth Edition of the Jacksonian Prize Essay on Cancer. By Harrison Cripps, F.R.C.S., Senior Surgeon, St. Bartholomew's Hospital. Third Edition. With 13 Plates and 34 Illustrations. 10*s.* 6*d.* net.

ALSO

Cancer of the Rectum, especially considered with regard to its Surgical Treatment. Jacksonian Prize Essay. Fifth Edition. With 13 Plates and several Engravings. 5*s.* net.

Heath's Manual of Minor Surgery and Bandaging. Thirteenth Edition. Revised by Bilton Pollard, F.R.C.S., Surgeon to University College Hospital. 198 Engravings. 6*s.* net.

BY THE SAME AUTHOR.

Injuries and Diseases of the Jaws. Fourth Edition. Edited by Henry Percy Dean, M.S., F.R.C.S., Assistant Surgeon to the London Hospital. 187 Wood Engravings. 14*s.*

ALSO

Clinical Lectures on Surgical Subjects delivered at University College Hospital. First Series, 6*s.*; Second Series, 6*s.*

An Essay on the General Principles of the Treatment of Spinal Curvatures. By R. Heather Bigg. Illustrated by Photographs and Sketches. 5*s.* net.

Surgery & Anæsthetics

The Surgery of the Alimentary Canal. By Alfred Ernest Maylard, M.B.Lond. and B.S., Senior Surgeon to the Victoria Infirmary, Glasgow. 27 Swantype Plates and 89 Figures in the Text. 25*s.*

BY THE SAME AUTHOR.

A Student's Handbook of the Surgery of the Alimentary Canal. 97 Illustrations. 8*s.* 6*d.*

ALSO

Abdominal Pain: its Causes and Clinical Significance. Second Edition. 7*s.* 6*d.* net.

Clinical Essays and Lectures. By Howard Marsh, F.R.C.S., Professor of Surgery in the University of Cambridge. 26 Illustrations. 7*s.* 6*d.*

Ovariotomy and Abdominal Surgery. By Harrison Cripps, F.R.C.S., Surgical Staff, St. Bartholomew's Hospital. Numerous Plates. 25*s.*

Diseases of the Thyroid Gland and their Surgical Treatment. By James Berry, B.S.Lond., F.R.C.S., Surgeon to the Royal Free Hospital. 121 Illustrations. 14*s.*

Hare-lip and Cleft Palate. By R. W. Murray, F.R.C.S., Surgeon, David Lewis Northern Hospital. 25 Illustrations. 3*s.*

Modern Bullet-Wounds and Modern Treatment, with Special Regard to Long Bones and Joints, Field Appliances and First Aid. By Major F. Smith, D.S.O., R.A.M.C. 3*s.* net.

Surgical Emergencies. By Paul Swain, F.R.C.S., Surgeon to the South Devon and East Cornwall Hospital. Fifth Edition. 149 Engravings. 6*s.*

The Accessory Sinuses of the Nose. By A. Logan Turner, M.D.Edin., Surgeon for Diseases of the Ear and Throat, Deaconess Hospital, Edinburgh. 81 Illustrations. 12*s.* net.

Chloroform: a Manual for Students and Practitioners. By Edward Lawrie, M.B.Edin., Lieut.-Col. I.M.S., Residency Surgeon, Hyderabad. Illustrated. 5*s.* net.

A Guide to Anæsthetics for the Student and General Practitioner. By Thomas D. Luke, M.B., F.R.C.S., Edinburgh. Third Edition. 43 Engravings. 5*s.* net.

Neurology & Urinary Disorders

Paralysis and other Nervous Diseases in Childhood and Early Life. By James Taylor, M.D., F.R.C.P., Physician National Hospital for Paralysed and Epileptic, Queen Square. 74 Illustrations. 12*s*. 6*d*. net.

A Manual of Diseases of the Nervous System.
By Sir William R. Gowers, M.D., F.R.S.

Vol. I.—**Nerves and Spinal Cord.** Third Edition, by the Author and James Taylor, M.D., F.R.C.P. 192 Engravings. 15*s*.

BY THE SAME AUTHOR.

Clinical Lectures on Diseases of the Nervous System. 7*s*. 6*d*.

ALSO

Subjective Sensations of Sight and Sound, Abiotrophy, and other Lectures on Diseases of the Nervous System. 18 Illustrations. 6*s*. net.

ALSO

Epilepsy and Other Chronic Convulsive Diseases: their Causes, Symptoms, and Treatment. Second Edition. 10*s*. 6*d*.

ALSO

The Borderland of Epilepsy, Faints, Vagal Attacks, Vertigo, Migraine, Sleep Symptoms, and their Treatment. 4*s*. 6*d*. net.

Selected Papers on Stone, Prostate, and other Urinary Disorders. By Reginald Harrison, F.R.C.S., Surgeon to St. Peter's Hospital. 15 Illustrations. 5*s*.

Obscure Diseases of the Urethra. By E. Hurry Fenwick, F.R.C.S., Surgeon to the London Hospital. 63 Illustrations. 6*s*. 6*d*.

BY THE SAME AUTHOR.

Obscure Diseases of the Kidney, the Value of Ureteric Meatoscopy in their Diagnosis and Treatment. 14 Plates and 43 Figures in the Text. 6*s*. 6*d*.

ALSO

Operative and Inoperative Tumours of the Urinary Bladder. 39 Illustrations. 5*s*. net.

ALSO

Tumours of the Urinary Bladder. Fasc. I. 5*s*. net.

ALSO

Ulceration of the Bladder, Simple, Tuberculous, and Malignant: a Clinical Study. Illustrated. 5*s*.

ALSO

A Handbook of Clinical Cystoscopy. 31 Plates and 144 Figures in the Text. 18*s*. net.

ALSO

Atlas of Electric Cystoscopy. 34 Coloured Plates. 21*s*. net.

Midwifery & Gynæcology
Medical Jurisprudence

Manual of Midwifery, including all that is likely to be required by Students and Practitioners. By Alfred L. Galabin, M.A., M.D., F.R.C.P., Consulting Obstetric Physician to Guy's Hospital. Sixth Edition. 329 Engravings. 14*s.* net.

Manual of Midwifery. By T. W. Eden, M.D., C.M.Edin., F.R.C.P.Lond., Assistant Obstetric Physician and Lecturer on Practical Midwifery, Charing Cross Hospital. 26 Plates and 233 Illustrations in the Text. 10*s.* 6*d.* net.

A Short Practice of Midwifery, embodying the Treatment adopted in the Rotunda Hospital, Dublin. By Henry Jellett, M.D., B.A.O.Dub., Ex-Assistant Master, Rotunda Hospital. Fourth Edition. 152 Illustrations. 8*s.* 6*d.*

BY THE SAME AUTHOR.

A Short Practice of Midwifery for Nurses, with a Glossary of the Medical Terms used in the Book. Second Edition. 4 Coloured Plates and 134 Illustrations. 6*s.* 6*d.* net.

A Short Manual for Monthly Nurses. By Charles J. Cullingworth, M.D., F.R.C.P., Obstetric Physician to St. Thomas's Hospital. Sixth Edition. 1*s.* 6*d.* net.

Diseases of Women. By Alfred L. Galabin, M.A., M.D., F.R.C.P., Consulting Obstetric Physician to Guy's Hospital. Sixth Edition. 284 Engravings. 16*s.* net.

A Short Practice of Gynæcology. By Henry Jellett, M.D., B.A.O.Dub., Ex-Assistant Master, Rotunda Hospital, Dublin. Second Edition. 225 Illustrations. 10*s.* 6*d.*

Outlines of Gynæcological Pathology and Morbid Anatomy. By C. Hubert Roberts, M.D.Lond., Physician to the Samaritan Free Hospital for Women. 151 Illustrations. 21*s.*

Lectures on Medical Jurisprudence and Toxi= cology. By Fred. J. Smith, M.D., F.R.C.P., Lecturer on Forensic Medicine and Toxicology at the London Hospital. 7*s.* 6*d.*

Medical Jurisprudence: its Principles and Prac= tice. By Alfred S. Taylor, M.D., F.R.C.P., F.R.S. Fifth Edition, by Fred. J. Smith, M.D., F.R.C.P., Lecturer on Medicine at the London Hospital. 2 vols. 39 Engravings. 36*s.* net.

Ophthalmology

Nettleship's Diseases of the Eye. Sixth Edition. Revised and Edited by W. T. Holmes Spicer, M.B., F.R.C.S., Ophthalmic Surgeon to St. Bartholomew's Hospital. 161 Engravings. 8*s.* 6*d.*

Medical Ophthalmoscopy: A Manual and Atlas. Fourth Edition. By Sir W. R. Gowers, M.D., F.R.S., and Marcus Gunn, M.B., F.R.C.S., Surgeon to the Royal London Ophthalmic Hospital. Autotype Plates and Woodcuts. 14*s.* net.

Manual of Ophthalmic Surgery and Medicine. By W. H. H. Jessop, M.A., F.R.C.S., Ophthalmic Surgeon to St. Bartholomew's Hospital. 5 Coloured Plates and 110 Woodcuts. 9*s.* 6*d.*

Practical Handbook of Diseases of the Eye. By D. Chalmers Watson, M.B., Ophthalmic Physician, Marshall Street Dispensary, Edinburgh. Second Edition. 9 Coloured Plates and 31 Figures in the Text. 5*s.* net.

Diseases of the Eye. By Cecil Edward Shaw, M.D., M.Ch., Ophthalmic Surgeon to the Ulster Hospital for Children and Women, Belfast. With a Test-Card for Colour Blindness. 3*s.* 6*d.*

Refraction of the Eye: a Manual for Students. By Gustavus Hartridge, F.R.C.S., Surgeon to the Royal Westminster Ophthalmic Hospital. Fourteenth Edition. 109 Illustrations, also Test-types, etc. 5*s.* net.

BY THE SAME AUTHOR.

The Ophthalmoscope: a Manual for Students. Fifth Edition. 68 Illustrations and 4 Plates. 4*s.* net.

Diseases of the Eye: a Manual for Students and Practitioners. By J. Herbert Parsons, D.Sc., M.B., B.S., F.R.C.S., Assistant Ophthalmic Surgeon, University College Hospital; Assistant Surgeon, Royal London (Moorfields) Ophthalmic Hospital. 308 Illustrations and 15 Plates. 10*s.* 6*d.* net.

BY THE SAME AUTHOR.

Elementary Ophthalmic Optics, including Ophthalmoscopy and Retinoscopy. 66 Illustrations. 6*s.* 6*d.*

Royal London Ophthalmic Hospital Reports. By the Medical and Surgical Staff. Vol. XVII, Part I. 5*s.* net.

Ophthalmological Society of the United Kingdom. Transactions. Vol. XXVI. 12*s.* 6*d.* net.

Otology ⸗ Pædiatrics ⸗ Dentistry

The Labyrinth of Animals, including Mammals, Birds, Reptiles, and Amphibians. By Albert A. Gray, M.D.(Glas.), F.R.S.E., Surgeon for Diseases of the Ear to the Victoria Infirmary, Glasgow. Vol. I, with 31 Stereoscopic Plates. 21*s.* net (including Stereoscope).

Some Points in the Surgical Anatomy of the Temporal Bone from Birth to Adult Life. By Arthur H. Cheatle, F.R.C.S., Aural Surgeon to King's College Hospital. 112 Illustrations. 5*s.* net.

Diseases of the Ear, including the Anatomy and Physiology of the Organ, together with the Treatment of the Affections of the Nose and Pharynx. By T. Mark Hovell, Senior Aural Surgeon to the London Hospital. Second Edition. 128 Engravings. 21*s.*

The Diseases of Children. By James F. Goodhart, M.D., F.R.C.P., and G. F. Still, M.D., F.R.C.P., Professor of the Diseases of Children, King's College. Eighth Edition. 12*s.* 6*d.* net.

The Wasting Diseases of Infants and Children. By Eustace Smith, M.D., F.R.C.P., Physician to the King of the Belgians, and to the East London Hospital for Children. Sixth Edition. 6*s.*

On the Natural and Artificial Methods of Feeding Infants and Young Children. By Edmund Cautley, M.D., Physician to the Belgrave Hospital for Children. Second Edition. 7*s.* 6*d.*

Dental Anatomy, Human and Comparative: a Manual. By Charles S. Tomes, M.A., F.R.S. Sixth Edition. 286 Engravings. 12*s.* 6*d.* net.

BY THE SAME AUTHOR.

A System of Dental Surgery. By Sir John Tomes, F.R.S. Revised by C. S. Tomes, M.A., F.R.S., and Walter S. Nowell, M.A.Oxon. Fifth Edition. 318 Engravings. 15*s.* net.

Practical Treatise on Mechanical Dentistry. By Joseph Richardson, M.D., D.D.S. Seventh Edition, revised and edited by George W. Warren, D.D.S. 690 Engravings. 22*s.*

Decay in Teeth: an Investigation into its Cause and Prevention. By J. Sim Wallace, M.D., D.Sc., L.D.S.R.C.S. Second Edition. 5*s.*

A Manual of Dental Metallurgy. By Ernest A. Smith, Assay Office, Sheffield. Second Edition. 38 Illustrations. 6*s.* 6*d.*

Dental Materia Medica, Pharmacology, and Therapeutics. By Charles W. Glassington, M.R.C.S., L.D.S.Edin.; Senior Dental Surgeon, Westminster Hospital. 6*s.*

Tropical Diseases & Dermatology

Waring's Bazaar Medicines of India. See page 6.

The Malarial Fevers of British Malaya. By Hamilton Wright, M.D. (McGill), Director of the Institute for Medical Research, Federated Malay States. Map and Charts. 3s. net.

BY THE SAME AUTHOR.

The Etiology and Pathology of Beri-Beri. With Map and Charts. 3s. net.

Beri-Beri: its Symptoms and Symptomatic Treatment. By Percy N. Gerrard, M.D., District Surgeon, Federated Malay States Civil Service. 2s. 6d. net. Extracts from the above, 1s. 6d. net.

On the Causes and Continuance of Plague in Hong Kong, with Suggestions as to Remedial Measures; a Report presented to the Secretary of State for the Colonies. By W. J. Simpson, M.D., F.R.C.P. Numerous Charts and Diagrams. 10s. net.

On the Outbreak of Yellow Fever in British Honduras in 1905, together with an Account of the Distribution of the Stegomyia fasciata in Belize, and the Measures necessary to Stamp Out or Prevent the Occurrence of Yellow Fever; a Report presented to the Government of that Colony. By Rubert Boyce, M.B., F.R.S. Illustrated with numerous Plates and Plans. Folio. 3s. 6d. net.

A Handbook on Leprosy. By S. P. Impey, M.D., late Chief and Medical Superintendent, Robben Island Leper and Lunatic Asylums, Cape Colony. 38 Plates. 12s.

A Manual of Diseases of the Skin, with an Analysis of 20,000 Consecutive Cases and a Formulary. By Duncan E. Bulkley, M.D., New York. Fourth Edition. 6s. 6d.

Skin Diseases of Children. By Geo. H. Fox, M.D., Clinical Professor of Diseases of the Skin, College of Physicians and Surgeons, New York. 12 Photogravure and Chromographic Plates and 60 Illustrations in the Text. 12s. 6d.

On Maternal Syphilis, including the Presence and Recognition of Syphilitic Pelvic Disease in Women. By John A. Shaw-Mackenzie, M.D. Coloured Plates. 10s. 6d.

The Diagnosis and Treatment of Syphilis. By Tom Robinson, M.D St. And., Physician to the Western Skin Hospital. Second Edition. 3s. 6d.

BY THE SAME AUTHOR.

The Diagnosis and Treatment of Eczema. Second Edition. 3s. 6d.

Ringworm, and some other Scalp Affections: their Cause and Cure. By Haydn Brown, L.R.C.P.Ed. 5s.

Chemistry & Physics

Chemistry, Inorganic and Organic. By CHARLES L. BLOXAM. Ninth Edition, by J. M. THOMSON, F.R.S., Professor of Chemistry in King's College, London, and A. G. BLOXAM, F.I.C. 284 Engravings. 18*s.* net.

The Elements of Chemistry. By M. M. PATTISON MUIR, M.A., Fellow of Caius College, Cambridge. Illustrated. 10*s.* 6*d.* net.

The Analyst's Laboratory Companion: a Collection of Tables and Data for Chemists and Students. By A. E. JOHNSON, B.Sc., F.I.C. Third Edition. 6*s.* 6*d.* net.

Commercial Organic Analysis: a Treatise on the Properties, Modes of Assaying, Proximate Analytical Examination, etc., of Organic Chemicals and Products used in the Arts, Manufactures, etc. In 8 vols. By A. H. ALLEN, F.I.C. £6 16*s.* [Prospectus on application.]

Volumetric Analysis; or, the Quantitative Estimation of Chemical Substances by Measure. By FRANCIS SUTTON, F.C.S., F.I.C. Ninth Edition. 121 Engravings. 20*s.* net.

A Manual of Chemistry, Theoretical and Practical. By WILLIAM A. TILDEN, D.Sc., F.R.S., Professor of Chemistry in the Royal College of Science, London. 2 Plates and 143 Woodcuts. 10*s.*

Valentin's Practical Chemistry and Qualitative and Quantitative Analysis. Edited by Dr. W. R. HODGKINSON, F.R.S.E., Professor of Chemistry at the Royal Military Academy, Woolwich. Ninth Edition. Engravings, 9*s.* (The Tables separately, 2*s.* 6*d.*)

A Handbook of Physics and Chemistry for the Conjoint Board. By H. E. CORBIN, B.Sc.Lond., and A. M. STEWART, B.Sc.Lond. Third Edition. 165 Illustrations. 6*s.* 6*d.* net.

A Treatise on Physics. By ANDREW GRAY, LL.D., F.R.S., Professor of Natural Philosophy in the University of Glasgow. Vol. I. Dynamics and Properties of Matter. 350 Illustrations. 15*s.*

Practical Chemistry and Qualitative Analysis. By FRANK CLOWES, D.Sc.Lond., Professor of Chemistry in the University Coll., Nottingham. Seventh Edition. 101 Engravings. 8*s.* 6*d.*

Quantitative Analysis. By FRANK CLOWES, D.Sc.Lond., and J. B. COLEMAN, A.R.C.Sci. Dub.; Professor of Chemistry, South-West London Polytechnic. Seventh Edition. 125 Engravings. 10*s.*

BY THE SAME AUTHORS.

Elementary Practical Chemistry. Fifth Edition.
Part I. General Chemistry. 75 Engravings. 2*s.* 6*d.* net.
Part II. Analytical Chemistry. 20 Engravings. 2*s.* 6*d.* net.

Introduction to Chemical Analysis. By HUGH C. H. CANDY, B.A., B.Sc., F.I.C., Lecturer on Chemistry in the London Hospital Medical College, Analyst to the London Hospital. 3*s.* 6*d.* net.

Researches on the Affinities of the Elements and on the Causes of the Chemical Similarity or Dissimilarity of Elements and Compounds. By GEOFFREY MARTIN, B.Sc.Lond. Illustrated. 16*s.* net.

Microscopy & Miscellaneous

The Microscope and its Revelations. By the late William B. Carpenter, C.B., M.D., LL.D., F.R.S. Eighth Edition, by the Rev. W. H. Dallinger, LL.D., F.R.S. 23 Plates and more than 800 Wood Engravings. 28s. Half-Calf 32s.; or, in two vols, sold separately, cloth, 14s. each.
Vol. I. The Microscope and its Accessories.
Vol. II. The Microscope, its Revelations.

The Microtomist's Vade-Mecum: a Handbook of the Methods of Microscopic Anatomy. By Arthur Bolles Lee. Sixth Edition. 15s. net.

The Quarterly Journal of Microscopical Science. Edited by Sir Ray Lankester, K.C.B., M.A., D.Sc., LL.D., F.R.S. Each Number, 10s. net.

Manual of Botany, in two Vols. By J. Reynolds Green, Sc.D., M.A., F.R.S., late Professor of Botany to the Pharmaceutical Society.
Vol. I. Morphology and Anatomy. Third Edition. 778 Engravings. 7s. 6d.
Vol. II. Classification and Physiology. Second Edition. 466 Engravings. 10s.

BY THE SAME AUTHOR.

An Introduction to Vegetable Physiology. Second Edition. 182 Illustrations. 10s. 6d. net.

Therapeutic Electricity and Practical Muscle Testing. By W. S. Hedley, M.D., in charge of the Electro-therapeutic Department of the London Hospital. 110 Illustrations. 8s. 6d.

A Manual for Hospital Nurses and others en- gaged in attending on the Sick. By Edward J. Domville, L.R.C.P.Lond., M.R.C.S.Eng., Surgeon to the Royal Devon and Exeter Hospital. Ninth Edition. 1s. 6d. net.

Nursing, General, Medical, and Surgical, with an Appendix on Sickroom Cookery and Dictionary of Medical Terms. By Wilfred J. Hadley, M.D., F.R.C.P., Physician to the London Hospital. Second Edition. 3s. 6d. net.

St. Thomas's Hospital Reports. By the Medical and Surgical Staff. Vol. XXXIV. New Series. 8s. 6d. net.

Guy's Hospital Reports. By the Medical and Surgical Staff. Vol. XLV. Third Series. 10s. 6d. net.

LONDON
J. & A. CHURCHILL
7 GREAT MARLBOROUGH STREET

3 9002 08634 8969